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Version: Version of Record

Link(s) to article on publisher's website:

<http://dx.doi.org/doi:10.21954/ou.ro.0000e11f>

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Oxford Regional Training Course in Clinical Psychology

Research Dissertation

**An investigation of factors predicting occupational and psychological distress in nurses: a comparative study of settings within a single hospital**

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July 1996

Submitted in part fulfilment of the British Psychological Society / Open University Doctorate in Clinical Psychology

Word count: approx. 25000

Date of award: 10<sup>th</sup> September 1996

# **An investigation of factors predicting occupational and psychological distress in nurses: a comparative study of settings within a single hospital**

## **Abstract**

Nursing is an occupation with high levels of stress. This study aimed to investigate which factors help predict distress in nursing staff in a range of settings within a single hospital. Interviews were conducted with a total of 82 qualified nursing staff from four settings; Accident & Emergency, Intensive Therapy Unit, Orthopaedics and Spinal Injuries. These were chosen for their different ways of working including duration of stay of patients. Questionnaire packs were returned by 60 participants, including information on general mental health, work-specific distress, work environment, coping, self-efficacy and social support. Main stressors as identified from the interviews were high workload / lack of staff, dealing with other professionals, death and dying, and dealing with abusive patients / relatives. Analyses showed that levels of distress were similar across settings and at a similar level to current NHS-wide research, but higher than previous UK normative values. Overall, high levels of distress were associated with low social support, younger age, high workload, low clarity and low task orientation. For general mental health personal system factors were the more important predictors. For work-specific distress (emotional exhaustion) health care system factors were more important. Clinical implications highlighted include particularly supporting younger staff, developing intervention strategies for work environment factors, and positive approaches such as greater acknowledgement of good work. Implications for theory and future research are also discussed.

## **Acknowledgements**

I would like to thank the Board of the NHS Trust studied, the Sisters and Charge Nurses of each ward that participated and especially all of the nurses with whom I met.

I would also like to thank Paul Kennedy for supervising this study, and Paul Griffiths for comprehensible and patient statistical advice.

Finally I would like to thank Mary and Euro 96 for general entertainment and relaxation.

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## 1.0 Introduction

It is increasingly recognised that working within a health setting is stressful. This study aims to investigate factors predicting distress in nurses across a range of settings in a single hospital. This project arose from the developing interest in staff mental health issues shown by the Board of a local NHS Trust.

In this introduction firstly the context of the problem in the UK will be presented. Then the theoretical frameworks will be discussed; this will include the nature of burnout, a general model of work stressors in health care, the structural and transactional models of stress, and the role of coping.

There is a large and diverse literature investigating stress in nursing and the most salient studies are selected. Recent empirical studies investigating stress, burnout and coping in nurses are considered. Those factors that are thought to be associated with distress are highlighted, including organisational and personal influences. The research literature specifically studying nurses in the UK is then addressed. The methodological limitations of past studies are considered and the gaps in the research described. The particular role of this study and its original contribution will be explained, together with the explicit aims and hypotheses.

This study will not be comparing nurses to other occupational groups. Support for such an approach is provided by the difficulties in validity and reliability of measures in non health care settings and evidence demonstrating that particular personality types are over-represented in different settings (Garden, 1994). The review does not examine community nurses, but only those working in hospitals, or psychiatric nurses in any detail because the particular stressors of that job have been studied and documented separately (Carson, Fagin & Ritter, 1992).



## 1.1 Background

The estimated cost of sickness absences from all employment due to stress and mental disorders in the UK was over £5 billion a year in 1991 (DOH/CBI, 1991). The completed Phase 1 results of a 5 year ongoing study examining levels and potential causes of well-being in large samples of employees working in NHS Trusts (the NHS Workforce Initiative) indicate that mental health is substantially poorer in staff in NHS Trusts than in employees in general who work outside the NHS as identified in the British Household Panel Survey (Borrill, Haynes & Carter, 1996). In a range of employees with a total sample of 12000 it emerged that overall 28.5% of nurses were identified as cases of minor psychiatric disorder using the General Health Questionnaire (GHQ-12). The Health Education Authority has listed nursing as one of the 4 high-stress occupations, together with social work, teaching and working in the police force (HEA, 1988). Furthermore in a study of occupational stress in 1176 employees of all occupational groups within one UK health authority nurses reported the highest levels of pressure (Rees & Cooper, 1992).

The Royal College of Nursing have commissioned regular reports from the Institute of Manpower Studies (now Institute of Employment Studies). These have produced various findings. One of the main reasons for nurses leaving the NHS is to reduce stress, and nurses in the NHS are more negative about workloads and issues of resources than nurses elsewhere (Seccombe & Ball, 1992). Nurses' absence from work increased over the period 1990-1992, with managers blaming increasing workloads, organisational change and job insecurity (Seccombe & Buchan, 1993). Less than one sixth of nurses considered their workloads to be satisfactory and 75% 'often' found the job stressful (Seccombe, Patch & Stock, 1994).

There is an increasing acknowledgement of the role of stress and recently the Nursing Times ran a series of articles on the subject (Roger & Nash, 1995a, 1995b, 1995c, 1995d; Seymour, 1995). Stressors that nurses face include; heavy workloads, long hours, low pay, competing pressures, emotional nature of working with people who are physically ill and dealing with their families, dealing with death and dying,

relationships with other professionals especially doctors, the responsibility and accountability entailed, organisational pressures due to NHS reforms. These can essentially be divided into 2 groups (Tyler & Cushway, 1992): firstly stressors relating to the physical environment and structure of work including staff pressures and time problems; and secondly stressors intrinsic to nursing, dealing with ill and dying people and their relatives.

## **1.2 Theoretical Framework**

### **1.2.1 Work-specific distress - Burnout**

The particular stressors in workplace settings and the resulting outcome have been specifically studied and the term burnout often applied. Maslach & Jackson (1986) describe burnout as a syndrome of emotional exhaustion and cynicism that frequently occurs among individuals who do 'people-work'. It is a process and the outcome of chronic stress and generally manifests itself as a psychological, physical and behavioural reaction. A key aspect is increased feelings of emotional exhaustion, and this is linked to another aspect, the development of negative reactions to clients including a loss of concern and feeling. A third aspect is the tendency to evaluate the self negatively particularly with regard to work with clients, and hence to feel dissatisfied with accomplishments on the job. These 3 factors are measured by the Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1986) which is specifically work-related and the most widely used scale in examining burnout.

Burnout has been criticised as a concept; emotional exhaustion is seen as the core factor but the depersonalization and personal accomplishment factors may be artefacts of human service work (Garden, 1989; Shirom, 1989). This may arise since this type of work is likely to attract particular personality types, without which these factors would not be obtained (Garden, 1994). However nursing falls well within the area of human service work, and it is acceptable to use the 3 factor model of burnout with human service workers (Evans & Fisher, 1993). Furthermore Schaufeli & Van



Dierendonck (1993) conclude from a study of 677 nurses that the MBI can be used as a reliable and valid indicator of burnout in such a group.

When presented to research participants and hospital management 'burnout' may be seen as emotive term and people are often sensitive to the terminology (Maslach & Jackson, 1986). Hence it was not used in the title of this study or in information distributed about it.

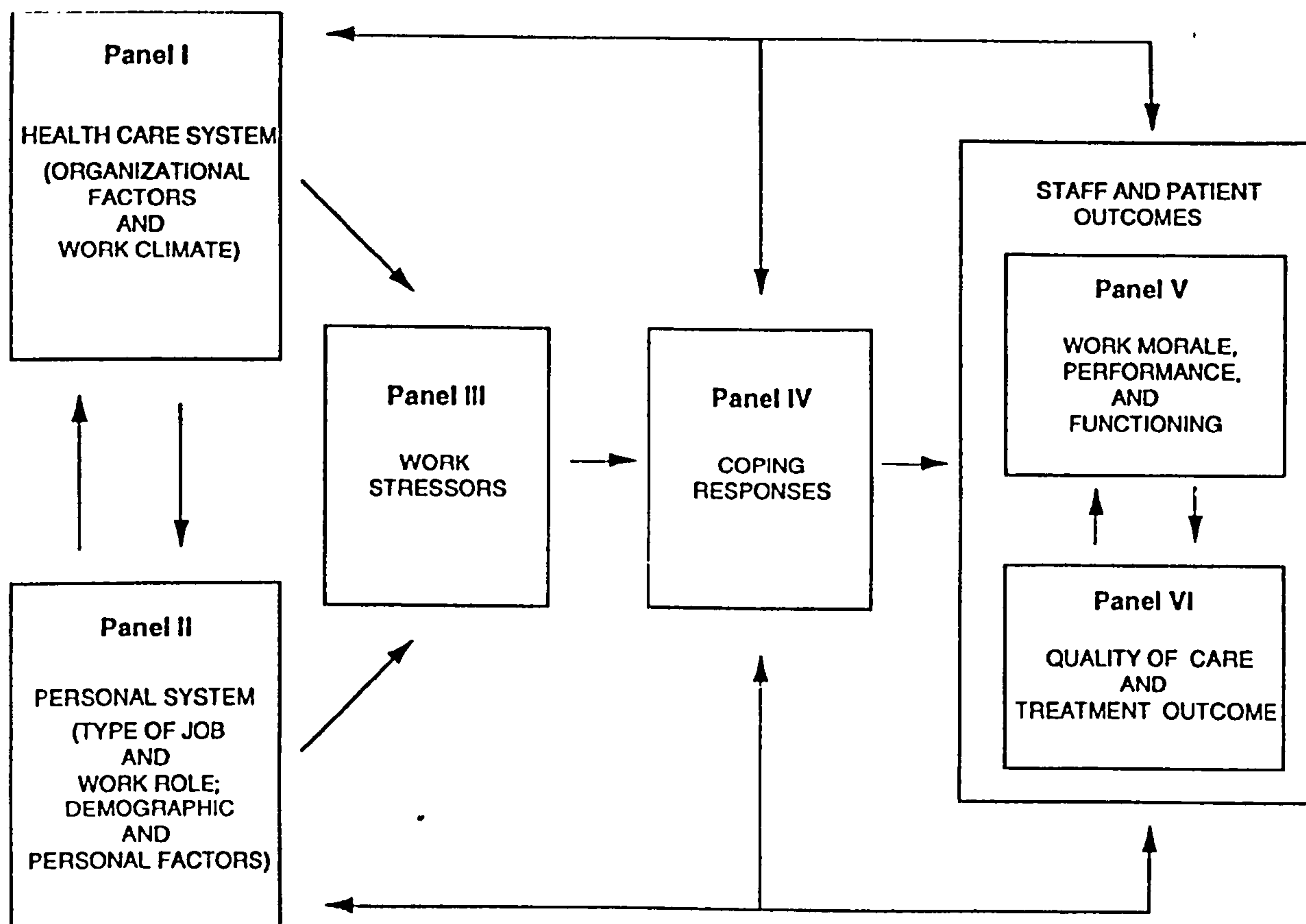
### **1.2.2 Model of Work Stressors in Health Care**

In the past studies have focused on the nature of stressors encountered by staff, compared stressors in different types of hospital units and examined the impact of stressors on staff outcomes without investigating beyond the stressors themselves. Moos & Schaefer (1987) and Schaefer & Moos (1993) present an attempted integrated conceptualisation of the types, determinants and outcomes of work stressors. Their general holistic model builds on 3 major conceptual perspectives from organisational theorists that have also been used in other settings: (1) human relations approach, which emphasises interpersonal relationships and organisational development; (2) sociotechnical perspective, which considers the task and social organisational factors eg primary task of Intensive Care Unit will make it different from other wards but also the particular supervisor support on a particular ICU will create a difference (Mohl, Denny, Mote & Coldwater, 1982); (3) information processing approach which highlights the importance of social constructions of work settings and employees appraisals of them (c.f. coping).

The model posits that both the health care system and staff members themselves can contribute to health care work stressors. The health care system includes organisational factors such as the work climate, while the personal system consists of characteristics of individual staff members such as type of job and work role, sociodemographic factors and personal resources such as self-confidence. Work stressors and the health care system and personal factors that foreshadow them can shape staff members' coping responses and ultimately affect their job morale and

performance, the quality of care they provide and patients' treatment outcomes. The bidirectional paths in the model reflect that these processes are transactional and that reciprocal feedback can occur at each stage (see Figure 1).

Figure 1: Model of Work Stressors in Health Care (Schaefer & Moos, 1993)



### 1.2.3 Frameworks of Stress

#### 1.2.3.1 Structural Model

The dominant research tradition treats environmental and person characteristics as separate and static causes of outcomes such as distress, burnout and job satisfaction. Components of the stress process lead to a predictive model of what causes stress. It examines the interaction between stimulus (stressor) and a response (distress). Most research has followed this line eg studies looking at sources of nurses work stress; association with demographic variables; outcome measures such as job satisfaction, turnover, health and well-being. It has been and continues to be productive in identifying factors associated with stress and providing intervention and research strategies.



### 1.2.3.2 Transactional Model

The transactional approach regards stress as relational in nature involving a transaction between the individual and the environment - the focus is on the process individuals go through in determining nature of stressful encounters (Lazarus, 1966, 1994). Psychological stress and its damaging effects are an individual matter and some people will cope better than others in particular environments but less well elsewhere. Research into the transactional model is best reflected by studies into coping.

Brief & George (1994) argue that theory and research on job-related stress needs to actively take into account the unique context that is focused on the workplace. They agree that stress occurs at an individual level but state that it is also useful to try and discover working conditions which are likely to adversely affect most workers exposed to them, and by searching for these conditions we better fulfil our societal responsibilities.

The transactional approach has a lot to commend it, but currently it has seemed difficult to translate this into research practice. Many of the theoretical arguments are yet to be resolved. For example the organisation may mediate the appraisal process as well as being an antecedent; the organisational setting may determine or constrain the potential options for use of coping strategies (Harris, 1994).

### **1.2.4 Coping**

Coping was initially conceptualised to have direct effects on mental well-being; the structural model implying that if a positive coping strategy is used it will work regardless of the source or amount of stress. The transactional model holds that coping strategies act as a buffer which interact with a stressor to predict mental health outcomes.

The transaction between the person and environment is evaluated by the person in a process termed appraisal (Lazarus & Folkman, 1984). There are two basic kinds of

appraisal: primary appraisal concerns whether or not there is any personal stake in the encounter; secondary appraisal concerns the available coping options for dealing with harm, threat or challenge. Lazarus & Folkman (1984) define coping as “the cognitive and behavioural efforts a person makes to manage demands that tax or exceed his or her personal resources”.

Coping includes both potentially adaptive and potentially maladaptive strategies, and the term does not imply success in itself. Coping is often conceptualised in two main forms: problem-focused coping consists of efforts to alter the actual stress relationship; emotion-focused coping consists of efforts to regulate the emotional distress caused by threat or harm. If a person appraises that a situation can be changed by his or her actions then problem-focused strategies are used more. If a person appraises that nothing can be done to change the situation emotion-focused coping predominates.

For Lazarus coping and appraisal mediate the relationship between person / environment fit and the emotional response. What this doesn't fully acknowledge is the potential for coping styles, a consistent reliance on a particular type of coping mechanism (Harris, 1994). If coping style is acknowledged then coping becomes a moderator variable rather than a mediator, ie it becomes an antecedent and moderates perception of the situation and how it is appraised. Lazarus (1994) acknowledges the recursive nature of the theoretical arguments in that coping may influence appraisal and simultaneously appraisal influence coping.

### **1.3 Empirical studies**

#### **1.3.1 Factors affecting stress and burnout in nurses (outside UK)**

Most research has been conducted in North America. Duquette, Kerouac, Sandhu & Beaudet (1994) compiled a comprehensive review of factors relating to nursing burnout. They covered studies up to 1990 and considered 3 main questions: what are the organisational factors, what are the sociodemographic factors and what are the



buffering factors related to nursing burnout? They chose correlational studies, those with a participation rate of over 35%, and with sufficient information on the instruments used and procedures followed. They concluded it appeared that the best correlates of high levels of burnout are high levels of role ambiguity and workload, decreased age, and low levels of hardiness, active coping and social support. But they gave little information on their relative importance or potential interaction.

### 1.3.1.1 Organisational

A number of studies have overall found few differences in levels of stress or burnout between different settings: general wards and ICUs (Harris, 1984); ICU, operating room, psychiatry and medical wards (Cronin-Stubbs & Rooks, 1985); medical-surgical and critical care (Chiriboga & Bailey, 1986); AIDS, cancer, ITU or medical units (Van Servellen & Leake, 1993). Kaplan (1987, cited in Duquette et al, 1994) found more burnout on oncology compared with obstetrics and Ogus (1994) found medical nurses scored higher on the MBI than surgical nurses.

Despite some divergence, time spent with patients does not seem to be a major factor in the development of burnout. Maslach & Jackson (1981) found a positive association between time spent with patients and burnout. No relationship was found by Connolly (1985, cited in Duquette et al, 1994), Hare & Pratt (1988) and Yasko (1983).

Stressors relating to the workplace seem relatively more important than stressors relating directly to patients. Burnout is related to low job influence (Van Servellen & Leake, 1993), high role ambiguity, and low work involvement and task orientation (Robinson, Roth, Keim, Levensen, Flentje & Bashor, 1991). The relation of high workload / work pressure to burnout is a consistent finding (Beaver, Sharp & Cotsonis, 1986; Landeweerd & Boumans, 1994; Robinson et al, 1991). Nurses who perceive little control over the job are more susceptible to burnout (Glass, McKnight & Valdimarsdottir, 1993; Keane, DuCette & Adler, 1985; Papadatou, Anagostopoulos & Monos, 1994). In a 2 year follow-up of 100 nurses McKnight & Glass (1995) demonstrated that nurses with high levels of burnout show accurate perceptions of job

uncontrollability, whereas non burned out nurses overestimated job control. They called this “burnout realism”.

In a large sample in the Netherlands Landeweerd & Boumans (1994) found positive effects from feedback, clarity, autonomy and socio-emotional rather than instrumental leadership.

#### 1.3.1.2 Sociodemographic.

The only consistent finding is that age relates negatively to 2 subscales on the MBI; emotional exhaustion (Williams, 1989; Turnipseed & Turnipseed, 1991) and depersonalization (Turnipseed & Turnipseed, 1991; Robinson et al, 1991); and positively with personal accomplishment (Robinson et al, 1991). This may be due to lack of experience and coping strategies to draw on, but also as they progress in their careers some nurses leave with the older ones remaining, who have thus by definition coped. However Ehrenfield & Bar-Tel (1995) found more experienced intensive cardiac care nurses were more burned out than less experienced nurses.

#### 1.3.1.3 Buffering

Individual differences in personality and abilities will affect coping and general well-being. One dimension that has been identified as a moderator of the relationship between work stress and health outcomes is hardiness (Kobasa, 1979). Hardiness was conceptualised as a personal ‘resistance resource’ which enabled individuals to remain healthy in spite of stressful life and work circumstances. A strong relationship between lack of hardiness and burnout has been found (Boyle, Grap, Younger & Thornby, 1991; Keane et al, 1985).

Social support of superiors and colleagues is also a reliable correlate of burnout (Duquette et al, 1994; Robinson et al, 1991). But these studies didn’t look at general social support outside of the workplace. High levels of social support at both home and work negatively correlated with burnout (Boyle et al, 1991).



Papadatou et al (1994) investigated burnout in oncology and general nurses in Greece. Multiple regression analyses suggested that personality characteristics (Hardiness Scale) predicted a greater percentage of variability of burnout (MBI) experienced than occupational (Job Stress Questionnaire) and demographic variables. However they failed to examine the work environment itself rather than the stressors caused by it.

#### 1.3.1.4 Coping

The primary finding has been that active coping is associated with better outcome and passive or avoidant coping is associated with higher levels of distress: use of palliative coping is associated with high levels of burnout (Ogus, 1994); use of emotion-focused coping positively correlated to burnout in critical care nurses (Boyle et al, 1991); escape and avoidance coping related to increased burnout (Ceslowitz, 1989); anticipatory coping (planning) related to less burnout (Chiriboga & Bailey, 1986).

Dewe (1987) conducted a large scale study in New Zealand in which he elicited coping responses from 1800 nurses, categorised them and went on to develop a checklist. On categorisation 25% were direct action strategies and 75% palliative strategies. He claimed to identify 6 strategies: 1 direct action, problem-oriented behaviour which includes cognitive aspects also; and 5 palliative, unwind and put things in perspective, express feelings or frustrations, keeping problems to self, accepting job as it is and trying not to let it get to you, passive strategies (eg smoke, coffee). These are in fact coping styles. However the self-report methodology used cannot identify strategies which individuals are not prepared to talk about. They may say what they feel what they ought to do or would like to do rather than actually do.

#### **1.3.2 UK Studies**

It is not always possible to generalise results across work cultures, especially at a time when the health service in the UK is undergoing continued organisational change. Hence UK studies need to be examined separately. Such work differences have been made clear by Baker, Carlisle, Riley, Tapper & Dewey (1992) who provided normative values for the Work Environment Scale (Moos, 1986) from 209 UK nurses

in a wide range of settings, and compared them with the US norms. UK nurses had higher levels of work involvement and peer cohesion but lower levels of supervisor support (relationship dimension). Autonomy, task orientation, and work pressure scales were higher in UK nurses (personal growth dimension). UK nurses had higher levels of control and innovation, lower levels of physical comfort, and an equal level of clarity (system maintenance and change dimension).

#### 1.3.2.1 Organisational

Similarly to research elsewhere burnout in UK nurses has been found to be related to role ambiguity (Firth, McIntee, McKeown & Britton, 1986; Firth, McKeown, McIntee & Britton, 1987) and workload / work pressure is the most consistent predictor of poor outcome (Hipwell, Tyler & Wilson, 1989; Tyler & Cushway, 1992, 1995). Sources of stress vary but levels of stress are similar across wards / units: renal nurses on different wards (Tyler & Cushway, 1992); 4 high dependency units (Tyler & Ellison, 1994); coronary care unit, renal unit, general medical ward and acute geriatric ward (Hipwell et al, 1989). 'Work overload' and 'death and dying' were identified as major stressors for all nurses (Hipwell et al, 1989).

#### 1.3.2.2 Sociodemographic

Being more highly qualified is associated with higher work involvement, supervisor support, work pressure and innovation (Baker et al, 1992). Hipwell et al (1989) found those with managerial training showed less stress. This may be due to the training or because those selected for managerial roles have lower stress levels as a group. However it has also been found that higher qualified staff had more stress, but not necessarily more psychological distress (Tyler & Ellison, 1994; Tyler & Cushway, 1995). Nurses with post-qualification training used the more adaptive cognitive coping and behavioural coping more often (Tyler & Cushway, 1995). Borrill et al (1996) in the ongoing NHS Workforce Initiative identified cases of minor psychiatric disorder using the GHQ-12 and found that senior nurses (33.8%) and staff nurses (30.9%) have poorer general mental health than their more junior colleagues.



### 1.3.2.3 Buffering

Different types of stress are associated with different types of coping strategy (Tyler & Cushway, 1992). Workload related stress was linked with active coping eg cognitive planning; lack of confidence was associated with active behavioural coping eg talk to a colleague; staff conflict was associated with avoidant coping. Social support (having partner and children) is associated with lower work stress (Tyler & Ellison, 1994). This may be due to actual support or that having other stressors outside reduces the perceived severity of work stressors.

A few researchers have created predictive models of stress. Hipwell et al (1989) used the WES and Nursing Stress Scale and found dissatisfaction with work environment and demographic factors predicted stress ( $r^2=.47$ , with 70% of the variables included in the model), with work pressure the single most important factor. Tyler & Cushway (1992) found GHQ score was predicted by home/work conflict and managing workload, and GHQ caseness from a combination of workload-related stress and use of an avoidant coping strategy.

Tyler & Cushway (1995) found support for the transactional model with a dissociation between factors that are important stressors and the final outcome mental health measure. Whilst lack of social support correlated strongly with GHQ score, lack of social support was unimportant as a source of stress (Nursing Stress Scale). The multiple regression showed GHQ predicted by lack of social support and avoidance coping but at a low level ( $r^2=.22$ ). They concluded that for work stress as opposed to health outcome in nurses the buffering effects of social support and coping are unimportant. Workload again was the most important factor. However they only measured social support via the NSS and background questions. A more direct measure of social support may have produced different results.

## 1.4 Summary

The factors generally associated with increased levels of distress and burnout have some consistency in the UK and elsewhere. These are: organisational - high workload, role ambiguity; sociodemographic - generally younger age; personal - low social support and low levels of hardiness. Active coping strategies are associated with better outcome than passive/avoidant strategies.

### 1.4.1 Critique

Problems with the literature include the diversity of instruments used in studies, some of which are very uncommon (eg Landeweerd & Boumans, 1994). In addition social support has been measured using stress scales or coping strategies rather than more directly (Tyler & Cushway, 1992, 1995). 'Stress' questionnaires should not be used by themselves to evaluate stress, and more general outcome measures should be used (Tyler & Cushway, 1995). Furthermore if a condition of employment adversely affects mental health then one should be able to demonstrate an association between the presence of the condition and some general (not work-specific) indicator of psychological well-being (Brief & George, 1994).

The use of the Hardiness Scale has been challenged (Hull, Van Treuren & Virnelli, 1987). It may be confounded with measures of maladjustment and overlap with social support as a potential stress moderator (Parkes, 1994). There has been less investigation in a work context of a similar but more specific concept - self-efficacy (Bandura, 1977). Traditionally self-efficacy is the belief in one's ability to perform a specific action. Recently there has been interest in generalised self-efficacy beliefs - these are general beliefs in one's ability to respond to and control environmental demands and challenges (Schwarzer, 1994).

There has been a lack of focus on the work environment itself as opposed to the stressors of nursing (eg Boyle et al, 1991; Papadatou et al, 1994). Intrinsic stressors have received more attention than structural/organisational ones (Tyler & Cushway, 1995). Although psychological distress and burnout are essentially defined in personal



terms, organisational factors should not be ignored. It is uncertain whether personal or organisational factors are the more important in predicting outcome.

In addition no studies have examined the relationship between coping and the work environment (Dewe, 1993). Do different styles of coping reflect the types of work environment nurses experience? Researchers have failed to distinguish between describing coping strategies and considering their impact (Folkman, 1984) especially with respect to palliative coping. Coping measures have often been too broad (eg 'emotion-focused') and there is a need to look at more particular strategies or styles (Dewe, 1987, 1993).

Sampling methods in studies differ and are rarely complemented by face-to-face interviews or qualitative data. There are often a good number in the sample but with a relatively low response rate (eg Tyler & Cushway, 1995, n=245 but response rate = 38%) but there are exceptions (Landeweerd & Boumans, 1994). This would indicate that generalisability of results is uncertain.

Most studies have adopted a structural approach. There is some empirical evidence for the transactional model but few studies have explicitly tested it (Dewe, 1993; Tyler & Cushway, 1995). Difficulties arise because many authors either neglect to place their work within a theoretical framework. The definition of stress itself can confuse matters; it can be used as an outcome or an agent. Even when using or purporting to use the transactional model there will often be underlying assumptions about the role of stress as either an agent or an effect ie stressor vs. distress/outcome (Dunn & Ritter, 1992).

#### **1.4.2 This study's approach**

This study examines both the differences in distress between the settings and the factors that best predict distress across the entire sample. Overall the study's theoretical framework is seen as a combination of Moos & Schaefer's (1987) model of health care stressors and the transactional approach to stress itself (Lazarus, 1994).

The underlying assumed definition of (di)stress is as effect rather than agent and particular stressors themselves will not be examined in a standardised way. Rather there will be a focus on the work environment and how it relates to outcome. Whilst the transactional approach is seen as the preferred and more accurate framework (coping and self-efficacy measures are included) a cross-sectional study such as this must adopt an essentially structural approach in its analysis.

This study addresses many of the problems raised with the current literature in the above section.

- (i) It includes measures of general well-being in addition to work-specific well-being.
- (ii) It includes a direct measure of general social support; and also includes a measure of social support in the workplace.
- (iii) Attention is paid to structural factors and work environment.
- (iv) It investigates the relationship between work environment and coping.
- (v) A representative picture of each ward can emerge from qualitative data including face-to-face interviews.
- (vi) A general model can be produced in which all the important correlates of burnout and health outcome are considered in a multiple regression statistical analysis from which the main predictors should emerge more clearly (Duquette et al, 1994).

## 1.5 Aims

- Provide descriptive levels of occupational distress (burnout) and psychological distress across a variety of ward settings
- Investigate similarities and differences between settings in terms of outcome measures and work environment in particular.
- Investigate how demographic factors affect distress outcome measures.
- Investigate the role of coping and the relationship with work environment and outcome measures.

- Explore a general explanative model predicting distress, with particular consideration to the relative importance of personal system and health care system factors.
- Give some guidance about what approaches might be appropriate to support staff.

## 1.6 Hypotheses

These are the main specific hypotheses for the research to address. The data will also be able to address other questions that have arisen from past research.

- 1) Increased age will be associated with decreased levels of distress.
- 2) High self-efficacy will be associated with decreased levels of distress.
- 3) High satisfaction with social support will be associated with decreased levels of distress.
- 4) A greater number of coping strategies used will be associated with increased levels of distress. In particular increased levels of distress will be associated with avoidant coping strategies such as behavioural disengagement and alcohol/drug use.
- 5) Levels of distress will be affected by factors in the perceived work environment. In particular increased levels of distress will be associated with increased perceived levels of work pressure and work involvement, and decreased perceived levels of supervisor support.
- 6) Levels of distress will be predicted more by health care system factors <sup>than</sup> ~~or~~ by personal system factors.



## **2.0 Method**

### **2.1 Participants**

Participants were nursing staff from a range of settings in a district general hospital with a supra-regional speciality; Accident & Emergency, Intensive Therapy Unit, Orthopaedics, Spinal Injuries (2 wards in order to obtain sufficient participants). The settings were chosen for their different ways of working, including duration of stay of patients. The aim was to talk to all qualified nursing staff and health care assistants on each ward. Those on long-term sick or maternity leave were excluded.

### **2.2 Design**

The study is cross-sectional and comparative between groups. Within a structural framework the outcome distress measures are the dependent variables and independent variables are the health care and personal systems variables. Within a transactional framework variables are codependent and relationships are bidirectional.

### **2.3 Measures**

#### **2.3.1 Interview (See Appendix I)**

Interviews were used to gain more insight into the specific difficulties facing nurses on each ward that would not necessarily be picked up via standardised questionnaires.

Initially demographic information was collected; this consisted of age, marital status, number of dependants, job grade, years qualified, post-qualification training, years in the particular speciality, years on the particular ward and hours contracted to work. They were also asked to estimate how many extra hours they worked in a week and the approximate percentage of time spent working in direct contact with patients.

The general questions give some idea of work stressors (Panel III). They asked for the best and worst aspects of about the job, what causes most pressure, whether they think



the stress is more or less than in other wards, how they cope, how others cope (Dewe, 1987), and whether they had received help for stress in the past. Questions about coping were explained further eg what helps you and others to cope was put as both at the time of the stressor and afterwards / more generally. They were also asked “if you think about work when you’re not at work what kind of things do you think about?”. The final question asked what changes they would make if they could.

Appropriate prompts were given during the interview. As far as possible participants were encouraged to talk freely which resulted in questions being covered before being explicitly asked - however the questions were asked anyway for any further information. The interview questions were seen by nurse managers in advance for comments.

### **2.3.2 Questionnaire Pack (see Appendix II)**

A questionnaire pack was compiled consisting of 6 questionnaires always presented in the same following order.

#### *(1) General Health Questionnaire - 12 (GHQ-12) (Goldberg, 1978, 1992)*

The GHQ is the best validated, self-administered measure for detecting psychiatric disorder in a UK population and has been found to be an appropriate indicator of mental health in occupational studies (Banks, Clegg, Jackson, Kemp, Stafford & Wall, 1980; Borrill et al, 1996). It is a measure of current state rather than chronic psychiatric illness, and a measure of general well-being rather than work-specific. Each of the 12 items asks whether the respondent has experienced a particular symptom or item of behaviour. There are 2 scoring methods: Likert scoring using a 4 point scale ranging from less than usual (0) to much more than usual (3); and GHQ-scoring, score 0 for less than and about the same as usual and 1 for a little more than and much more than usual. This latter method provides a score between 1 and 12 with a conservative cut-off for minor psychiatric disorder of 4 or above (Borrill et al, 1996). For each scoring method high scores indicate a high level of psychiatric disturbance. Cronbach’s alpha ranged from .82 to .90 in a series of studies (Goldberg & Williams, 1988).

*(2) Work Environment Scale, Form R (WES) (Moos, 1986)*

This is a 90-item scale consisting of 10 subscales of 9 items each, covering 3 different dimensions. Respondents indicate true or false for each item; subscale scores are the sum of true responses. A high score on any scale indicates a greater presence of that characteristic. Form R measures perceptions of existing work environments. Cronbach's alpha given in parentheses below (Moos, 1986).

*Relationship dimensions*

- (1) Work Involvement: the extent to which employees are concerned about and committed to their jobs (.84).
- (2) Peer Cohesion: the extent to which employees are friendly and supportive of one another (.69).
- (3) Supervisor Support: the extent to which management is supportive of employees and encourages employees to be supportive of one another (.77).

*Personal Growth & Goal Orientation Dimensions*

- (4) Autonomy: the extent to which employees are encouraged to be self-sufficient and to make their own decisions (.73).
- (5) Task Orientation: the degree of emphasis on good planning, efficiency and getting the job done (.76).
- (6) Work Pressure: the degree to which the pressure of work and time urgency dominate the job milieu (.80).

*System Maintenance and System Change Dimensions*

- (7) Clarity: the extent to which employees know what to expect in their daily routine and how explicitly rules and policies are communicated (.79).
- (8) Control: the extent to which management uses rules and pressures to keep employees under control (.76).
- (9) Innovation: the degree of emphasis on variety, change, and new approaches (.86).
- (10) Physical Comfort: the extent to which the physical surroundings contribute to a pleasant work environment (.81).

A general measure of social support in the workplace can be derived from the sum of the WES subscales work involvement, peer cohesion and supervisor support to give a Work Relationship Index (Holahan & Moos, 1983). The WES has been administered to many different work groups: US norms exist for a general work group and a health-care work group (n=1607). Recently UK norms for nursing staff have been developed (n=209) (Baker et al, 1992).

*(3) Maslach Burnout Inventory (MBI) (Maslach & Jackson, 1986)*

This is a 22-item scale specifically designed for people who work in human services organisations and consists of 3 subscales: Emotional Exhaustion (EE), feelings of being emotionally overextended and exhausted by one's work (9 items); Depersonalisation (DP), an unfeeling and impersonal response to clients (5 items); and Personal Accomplishment (PA), feelings of competence and successful achievement in one's work (8 items). Responses to each item in frequency felt range from never (0) to every day (6). Subscale scores are the sum of responses on each item. Burnout is defined by high scores on the EE and DP subscales and low scores on the PA subscale. There is an intensity scale but this is used far less frequently and can be omitted without loss of validity (Maslach & Jackson, 1986). Reliability estimates for a US sample (n=1316) are Cronbach's alpha of .90 for EE, .79 for DP, .71 for PA (Maslach & Jackson, 1986). In a sample of UK nurses (n=200) differences exist in normative values (Firth, McIntee, McKeown & Britton, 1985).

*(4) Generalized Self-Efficacy Scale (GSES) (Schwarzer, 1992)*

This is a 10-item scale which assesses the strength of an individual's belief in his or her own ability to respond to novel or difficult situations and to deal with any associated obstacles or setbacks. Each item is scored from not at all true (1) to exactly true (4). Total score is from summed items. The higher the score the greater is the individual's generalized sense of self-efficacy. The scale was originally compiled in German and normative and psychometric data are currently only available for that form. Cronbach alphas range from .82 to .93 in a number of studies (Schwarzer, 1992).



(5) *Brief COPE* (B-COPE) (Carver, 1994)

The original COPE is a 60-item multidimensional coping inventory developed by Carver, Scheier & Weintraub (1989). It consists of 13 conceptually distinct scales plus 2 later added scales. The B-COPE was developed by Carver and colleagues originally for use in research with breast cancer patients and represents an abbreviated version of several COPE scales (Carver, Pozo, Harris, Noriega, Scheier, Robinson, Ketcham, Moffat & Clark, 1993). It was developed because participants in various projects felt that the COPE was excessively long, especially when given in a wider assessment or research protocol. This point was also made specifically concerning occupational research (Parkes, 1994). It consists of 24 items dividing into 12 subscales; items chosen by strong loadings on previous COPE factor analyses and reliability studies. Carver et al (1993) give values of Cronbach's alpha of over 0.6 for each scale. Further psychometric properties of the B-COPE are forthcoming but still to be published. Items are rated from don't do this at all (1) to do this a lot (4), and scores for each scale indicate the extent to which each type of coping is used.

- 1) Self-distraction: psychological disengagement from the goal with which the stressor is interfering by means of self-distraction including other activities.
- 2) Active coping: taking action to remove or circumvent the stressor.
- 3) Denial: an attempt to reject the reality of the stressful event.
- 4) Alcohol/drug use
- 5) Use of emotional support: getting sympathy or emotional support from someone.
- 6) Behavioural disengagement: giving up, or withdrawing effort from, the attempt to attain the goal with which the stressor is interfering.
- 7) Venting: increased awareness of one's emotional distress and a tendency to discharge those feelings.
- 8) Positive reframing: making the best of a situation or viewing it in a more favourable light.
- 9) Planning: thinking about how to confront the stressor, planning one's coping efforts.
- 10) Use of humour
- 11) Acceptance: accepting the fact that the stressful event has occurred and is real.
- 12) Religion

*(6) Short Form Social Support Questionnaire (SSQ6) (Sarason, Shearin, Pierce & Sarason, 1987)*

This is a 6-item version of the original 27-item SSQ (Sarason, Levine, Basham & Sarason, 1983). It yields one quasi-structural measure (SSQ6-N; number of supports) and one global functional measure (SSQ6-S; satisfaction with support). For each of the 6 questions, respondents are required to list all the individuals known to them who provide the particular type of support described in that question. Up to 9 individuals can be listed. The respondents then have to rate their level of satisfaction with this type of support from very dissatisfied (1) to very satisfied (6). There are no norms for the SSQ6 so it is not possible to identify whether individual scores reflect high or low levels of support or satisfaction. Thus the scores provide relative measures, which can be used as independent or dependent variables in studies. Both number and satisfaction subscales show high internal consistency, Cronbach alpha .90 to .93 (Sarason et al, 1987).

In relation to the model shown earlier (Figure 1, Schaefer & Moos, 1993) this study examines Panel I - Health Care System (WES and other ward data), Panel II - Personal System (GSES, demographic data, SSQ6), Panel IV - Coping Responses (B-COPE), and Panel V - Staff Outcomes (GHQ, MBI).

## **2.4 Procedure**

### **2.4.1-Setting up the study**

Initial contact and discussions came through the Clinical Psychology Service Manager for the Trust, who acted as supervisor for the study. Following this a series of meetings were arranged; initially with the Executive Nurse Director of the Trust and the Regional Nursing Officer to discuss potential approaches and general issues, and also the Personnel Director to gain permission to proceed with the aim of contacting staff. Information was also sent to the Business Manager, Medical Director and Chief Executive, all of whom indicated their approval. The proposal (see Appendix III) was also presented at a meeting of the Clinical Nurse Specialists of the Trust at which



much interest was shown and feedback overwhelmingly positive. Ethical approval was sought and granted at this point.

Meetings were then arranged with the nurse in charge of each of the wards that were proposed for inclusion, to discuss the aims of the project, the feasibility of meeting staff on their ward and to discover how best to arrange the process of interviewing staff. Support was given from every ward approached. Staff meetings were attended on each ward (at least 2 on each in order to meet as many staff as possible); at these nurses were given written and verbal information about the study (see Appendix IV) and were given an opportunity to ask questions. Inevitably not all staff were seen at these meetings to introduce the study. However information was left for everyone and efforts were made to be introduced before arranging interviews.

#### **2.4.2 Individual Interviews**

3 wards arranged specific interview times (A&E, 2 Spinal wards). The other 2 (ITU, Orthopaedics) gave times when they were least busy and suggested that they should be visited within those slots, since they couldn't rely on people being available. All participants were interviewed individually during working hours in a quiet room on or near their ward of work. This also allowed for more informal contact with nursing staff.

At the start of the interview the information sheet was given to participants again together with a further verbal description of the aims and procedures of the project. At this point they were encouraged to ask questions before signing consent forms. At the end of the interview they were again given the opportunity to ask questions, and were also given the questionnaire pack together with an SAE. They were asked to complete the questionnaires if possible within a couple of weeks. If after about 6 weeks the questionnaires had not been received the individuals were sent a replacement set with SAE and covering letter (see Appendix V).



## **2.5 Ethical Considerations**

### **2.5.1 Consent**

The study was introduced thoroughly by both written information and verbally in person. There were many opportunities to ask questions about the study. Consent forms were completed at the start of individual interviews when all questions at that stage had been answered (see Appendix VI).

### **2.5.2 Confidentiality**

All staff were seen individually in quiet rooms close to or on the wards, where it was very unlikely to be disturbed. Questionnaire packs were given a code number known only to the researcher, so that they could be tallied with information gained at interview. It was made clear to participants that all information would remain confidential and that nobody would be able to be identified in the report. The researcher's independence from the hospital under study was strengthened by the return address for the questionnaires being the Oxford base.

### **2.5.3 Distress**

Confidential appointments to discuss possibilities for further individual help / appropriate referral were available. The cover sheet of the questionnaire pack included two phone numbers at which the researcher could be contacted and information was provided concerning Nurseline, an independent and confidential advice and helpline for nurses established by the Royal College of Nursing (see Appendix II).

Ethical approval from the Local Research Ethics Committee was applied for and granted (see Appendix VII). This occurred after initial meetings and before individually meeting the nurses in charge of the specific wards.

### 3.0 Results

Within this section the following results are presented: response rate; preparatory analyses including checks for normal distribution of values of variables and examination of the attrited sample; presentation of descriptive data, including demographic and work-related information from the interview and variables from the questionnaire packs; some qualitative results obtained from the interview to give some flavour for the issues and stressors faced; explicit testing of the hypotheses as presented in section 1.6; and some further analyses following on from these results.

#### 3.1 Response rate

A total of 82 qualified nurses were interviewed out of a possible total of 90. Three declined to participate and five were simply missed due to shift patterns and time constraints. Of those interviewed 60 qualified nurses returned questionnaire packs (see Table 1). Hence response rate for quantitative data was 67% of the potential sample and 73% of those interviewed.

Table 1: Numbers of participants interviewed and returning questionnaire packs

Ward	Potential sample	Interviewed	Questionnaires
Orthopaedic	18	16	12
ITU	22	20	14
A&E	24	22	18
Spinal 1	12	12	7
Spinal 2	14	12	9
Total	90	82	60

In addition to qualified staff, 19 Health Care Assistants (HCA) were interviewed out of a possible total of 25 and 8 returned questionnaire packs. Within this report the results obtained from HCAs are not fully reported nor similarities and differences between HCAs and qualified nursing staff examined. This is due to lower numbers and response rate. Furthermore only the Spinal and Orthopaedic wards had HCAs whilst A&E and ITU did not. However summary results from those HCAs interviewed and from questionnaire packs are given in Appendix VIII.

## 3.2 Initial Analyses

All statistics were performed using SPSS for Windows.

### 3.2.1 Tests for normal distribution

Initially Kolmogorov-Smirnov tests were performed on all interval scale data to see if they differed from the normal distribution. This was in order to guide the later choice of parametric versus non-parametric statistical procedures. This was done for each variable from the questionnaire pack for each ward separately and on the sample as a whole, and on interval data gained at interview for those who returned questionnaire packs and those who did not. The full table of Kolmogorov-Smirnov test results can be seen in Appendix IX.1. The significance level was set at .01 due to the large number of tests performed.

For the entire sample (n=60) those variables that fell outside a normal distribution were: WES subscale work pressure ( $Z=1.67$ ,  $p<.01$ ) and B-COPE subscales denial ( $Z=1.95$ ,  $p<.01$ ), alcohol/drug use ( $Z=1.97$ ,  $p<.01$ ), behavioural disengagement ( $Z=2.21$ ,  $p<.001$ ), humour ( $Z=1.90$ ,  $p<.01$ ), acceptance ( $Z=1.92$ ,  $p<.01$ ) and religion ( $Z=2.62$ ,  $p<.001$ ). When looking at these variables by each ward separately it was found that in the Orthopaedic, Spinal and ITU settings all variables did not differ from the normal distribution. In A&E the only variable to differ from a normal distribution was the B-COPE subscale religion ( $Z=1.97$ ,  $p<.01$ ).

However due to the limited range in the values of B-COPE subscales and the small number of items per subscale non-parametric statistical procedures were used on all further analyses involving them.



### 3.2.2 Attrition

Were those who returned the questionnaire packs representative of the entire interviewed sample? To answer this question information from the interview was examined for the group that returned questionnaire packs with those that did not. The Kolmogorov-Smirnov tests showed that for those who sent back the questionnaire packs age, years qualified and years in speciality did not differ from the normal distribution, whilst years on ward ( $Z=1.85$ ,  $p<.01$ ), hours worked ( $Z=3.39$ ,  $p<.001$ ), extra hours worked ( $Z=1.93$ ,  $p<.01$ ), percentage time in direct contact with patients ( $Z=1.64$ ,  $p<.01$ ) and time for interview ( $Z=1.95$ ,  $p<.01$ ) did differ. For the sample that did not return questionnaire packs none of the above variables differed from a normal distribution except for hours worked ( $Z=1.79$ ,  $p<.01$ ).

Independent sample t-tests (including Levene's test for equal variances) were performed on the variables age, years qualified and years in speciality; Mann-Whitney U-tests were performed on years on ward, hours worked, extra hours worked, estimate of percentage direct contact, and time for interview. There were no differences between the groups except that those not returning questionnaire packs had a significantly higher estimate of percentage time in direct contact with patients than those who did return them ( $Z= -2.19$ ,  $p<.05$ ).

For categorical data crosstabs analyses were used to obtain chi-square values. There was no evidence that response rates were significantly different between men and women (Fisher's Exact Test two-tail  $p=.185$ ). To compare response rate by marital status the categories were combined into those who were married/cohabiting and those who were single/divorced/separated/widowed to create groups with expected values significantly large for the chi-square to be reliable. Marital status had no effect on response rate ( $\chi^2=.900$ , d.f.=1, n.s.). In a similar fashion participants were divided into those who had dependants and those that had not. Having dependants had no effect on response rate ( $\chi^2=.289$ , d.f.=1, n.s.). The effect of grade was examined using three groups, grade D, grade E, and grades F, G and H in a single group. This showed that response rate did not differ by grade ( $\chi^2=2.351$ , d.f.=1, n.s.). (See Appendix IX.2 for full table of data and analyses)

### **3.2.3 Spinal wards**

The differences between the two spinal wards were examined with the aim of combining the 2 samples to create a sample of similar size to those from other settings, and more amenable to parametric analysis. Since t-tests could not be used due to low sample numbers a series of Mann-Whitney U-tests corrected for ties were performed. These were all non-significant except for the WES subscale physical comfort ( $U=10.5$ ,  $p<.05$ ) (full table in Appendix IX.3). In the light of this single difference (which might be expected by chance given the number of analyses) the two spinal samples were combined into a single group in all further analyses.

## **3.3 Descriptive data**

### **3.3.1 Demographic and work-related data for each setting and total sample**

Of the sample interviewed ( $n=82$ ) the majority were female ( $n=76$ ), married or cohabiting ( $n=62$ ), and had no dependants ( $n=45$ ). 20 were grade D, 38 grade E and 24 grade F or above. Average age was 34.5 years (SD 8.2), qualified for 12.2 years (SD 8.4), working within the speciality for 6.7 years (SD 6.1) and the particular ward for 3.3 years (SD 3.6). They estimated on average that they spent 78% (SD 15.5) of their time in direct contact with patients, and that they worked 1.8 hours per week (SD 2.2) on top of contracted hours. On average the interviews took 22.6 minutes (SD 7.1). (See Table 2).

Investigating differences between settings using Kruskal-Wallis and One-way ANOVAs there were significant differences found only in years on ward ( $H=15.21$ ,  $d.f.=3$ ,  $p<.01$ ) and extra hours worked ( $H=19.04$ ,  $d.f.=3$ ,  $p<.001$ ). By inspection it appears that these differences arise from staff on the Orthopaedic ward having been there a relatively short amount of time and staff in the A&E department for a relatively long time; and those in the Spinal wards working the most extra hours.

Table 2: Demographic and work related data for total sample and each setting. Included are analyses for differences between settings; one-way ANOVAs and Kruskal-Wallis (indicated by '+').

differences between settings, one-way ANOVAs and Kruskal-Wallis (indicated by *).												
Variable		Total n=82		Orthopaedic n=16		ITU n=20		A&E n=22		Spinal n=24		
female		76		15		20		20		21		
male		6		1		0		2		3		
single		15		3		1		5		6		
married/cohabiting		62		13		17		16		16		
separated/divorced		4		0		1		1		2		
widowed		1		0		1		0		0		
dependants	0	45		6		11		12		16		
	1	14		3		4		4		3		
	2	19		7		3		6		3		
	3	4		0		2		0		2		
grade	D	20		5		3		6		6		
	E	38		8		11		10		9		
	F	15		2		2		3		8		
	G	7		1		3		2		1		
	H	2		0		1		1		0		
		mean	(SD)	mean	(SD)	mean	(SD)	mean	(SD)	mean	(SD)	F/H
age (years)		34.54	(8.18)	36.06	(10.19)	36.25	(6.60)	34.68	(7.97)	32.08	(7.94)	1.28
qualified (years)		12.19	(8.41)	13.05	(11.10)	13.63	(6.57)	13.00	(8.54)	9.72	(7.53)	1.04
speciality (years)		6.68	(6.14)	4.08	(5.24)	8.87	(4.72)	6.90	(8.36)	7.26	(4.84)	1.89
ward (years) +		3.31	(3.63)	1.49	(1.19)	5.52	(3.68)	3.47	(4.93)	2.57	(2.22)	15.21 ***
hours (/week) +		33.05	(7.31)	31.66	(7.45)	34.37	(5.36)	31.28	(8.86)	34.84	(6.96)	4.20
extra hrs (/week) +		1.77	(2.21)	1.75	(0.93)	0.60	(1.27)	1.36	(1.97)	3.50	(2.91)	19.04 ****
% patient contact		77.93	(15.49)	74.38	(11.38)	77.75	(19.02)	80.00	(14.56)	74.17	(15.98)	.41
interview (mins)		22.55	(7.10)	22.81	(8.34)	24.35	(9.61)	21.64	(5.51)	20.83	(4.85)	.66

\*p<.05, \*\*p<.01, \*\*\*p<.005, \*\*\*\*p<.001

### 3.3.2 Means of variables for each setting and total sample

Means and standard deviations of variables from the questionnaire packs for the total sample and each setting separately are shown in Table 3.

On the GHQ-12 (GHQ-scored) the following numbers reached a conservative cut-off level for minor psychiatric disorder (>3): Orthopaedic 2/12; ITU 4/14; A&E 4/18; Spinal 5/16. Thus in total 15/60 (25%) of those replying reached cut-off.

The most strongly indicated aspects of the work environment were work pressure, task orientation, work involvement and peer cohesion. The least strongly indicated aspects



of the work environment were physical comfort, innovation, supervisor support and autonomy.

Table 3: Means and standard deviations of outcome, coping and work environment measures for whole sample and different settings. Included are one-way ANOVAs to analyse differences between settings (Kruskal-Wallis for B-COPE subscales).

Var- iable	Total n=60		Orthopaedic n=12		ITU n=14		A&E n=18		Spinal n=16		F
	mean	(SD)	mean	(SD)	mean	(SD)	mean	(SD)	mean	(SD)	
GHQ	11.98	(4.67)	10.25	(3.57)	13.00	(5.92)	11.67	(3.96)	12.81	(5.00)	.951
EE	24.12	(11.50)	20.75	(10.82)	22.50	(13.18)	25.39	(10.81)	26.63	(11.44)	.753
DP	7.03	(5.05)	6.33	(4.23)	5.14	(4.67)	8.28	(5.98)	7.81	(4.65)	1.23
PA	36.52	(5.91)	38.67	(3.55)	33.36	(7.53)	35.83	(5.47)	38.44	(5.24)	2.73
GSES	31.76	(3.83)	30.82	(2.27)	31.00	(4.11)	32.50	(4.88)	32.25	(3.09)	.706
INVL	6.77	(1.89)	7.25	(1.82)	5.43	(1.95)	7.44	(1.72)	6.81	(1.60)	3.86 *
COHN	6.28	(1.91)	6.42	(2.02)	4.43	(1.40)	7.17	(1.62)	6.81	(1.47)	8.47 ****
SUPP	4.63	(2.41)	5.17	(2.21)	3.07	(2.13)	5.61	(2.43)	4.50	(2.22)	3.58 *
AUTN	4.87	(1.92)	5.33	(1.30)	3.93	(2.13)	5.44	(2.12)	4.69	(1.66)	2.04
TASK	6.83	(1.43)	7.33	(1.61)	6.64	(1.78)	7.00	(1.19)	6.44	(1.15)	1.06
PRES	7.00	(1.91)	7.33	(2.10)	5.79	(1.89)	7.22	(1.56)	7.56	(1.86)	2.77 *
CLAR	5.82	(1.65)	6.42	(1.68)	5.43	(1.74)	6.28	(1.41)	5.19	(1.64)	2.14
CNTL	5.92	(1.54)	6.17	(1.59)	6.50	(1.51)	5.78	(1.31)	5.38	(1.71)	1.51
INNV	3.97	(2.57)	4.33	(2.39)	3.93	(2.56)	4.50	(2.75)	3.12	(2.53)	.908
COMF	3.48	(2.17)	3.75	(2.05)	3.14	(1.61)	2.00	(1.88)	5.25	(1.73)	9.28 ****
											H
DIST	5.25	(1.56)	5.45	(1.29)	4.93	(1.49)	5.00	(2.00)	5.69	(1.20)	2.94
ACTV	6.27	(1.35)	6.00	(1.26)	5.86	(1.61)	6.83	(0.92)	6.19	(1.47)	4.52
DEN	3.19	(1.43)	2.91	(1.04)	3.43	(1.74)	3.39	(1.42)	2.94	(1.44)	1.86
ALC	3.14	(1.46)	3.36	(1.69)	2.71	(0.91)	2.94	(0.94)	3.56	(2.03)	1.23
EMOT	6.10	(1.75)	6.27	(1.35)	5.50	(2.14)	6.22	(1.80)	6.37	(1.59)	1.30
BDIS	2.80	(0.96)	2.91	(1.38)	2.71	(0.99)	2.78	(0.88)	2.81	(0.75)	.453
VENT	5.15	(1.48)	5.00	(1.55)	5.71	(1.82)	5.00	(1.37)	4.94	(1.24)	1.93
POSI	5.59	(1.58)	5.73	(1.35)	5.93	(1.69)	5.33	(1.94)	5.50	(1.21)	1.07
PLAN	6.02	(1.46)	5.73	(0.90)	6.36	(1.50)	6.00	(1.85)	5.94	(1.29)	1.56
HUM	5.25	(1.82)	6.00	(1.41)	4.79	(1.85)	5.17	(2.01)	5.25	(1.81)	2.62
ACC	6.12	(1.47)	5.64	(2.11)	6.43	(1.22)	6.39	(1.33)	5.88	(1.31)	1.87
RELN	3.41	(1.95)	3.73	(2.10)	3.50	(2.10)	2.56	(1.15)	4.06	(2.24)	5.59
											F
SSNO	22.95	(11.86)	33.70	(14.17)	19.14	(6.71)	21.56	(12.22)	21.13	(10.43)	3.96 *
SATIS	31.61	(4.36)	32.55	(2.58)	30.50	(5.49)	31.50	(4.89)	32.06	(3.70)	.521

\*p<.05, \*\*p<.01, \*\*\*p<.005, \*\*\*\*p<.001

GHQ, General Health Questionnaire: Maslach Burnout Inventory Subscales; EE, emotional exhaustion; DP, depersonalisation; PA, personal accomplishment: GSES, Generalised Self-Efficacy Scale: Work Environment Scale Subscales; INVL, work involvement; COHN, peer cohesion; SUPP, supervisor support; AUTN, autonomy; TASK, task orientation; PRES, work pressure; CLAR, clarity; CNTL, control; INNV, innovation; COMF, physical comfort: Brief COPE subscales; DIST, self-distraction; ACTV, active coping; DEN, denial; ALC, alcohol/drug use; EMOT, emotional support; BDIS, behavioural disengagement; VENT, venting; POSI, positive reframing; PLAN, planning; HUM, use of humour; ACC, acceptance; RELN, religion: Social Support Questionnaire; SSNO, total number of social support; SATIS, satisfaction with social support.

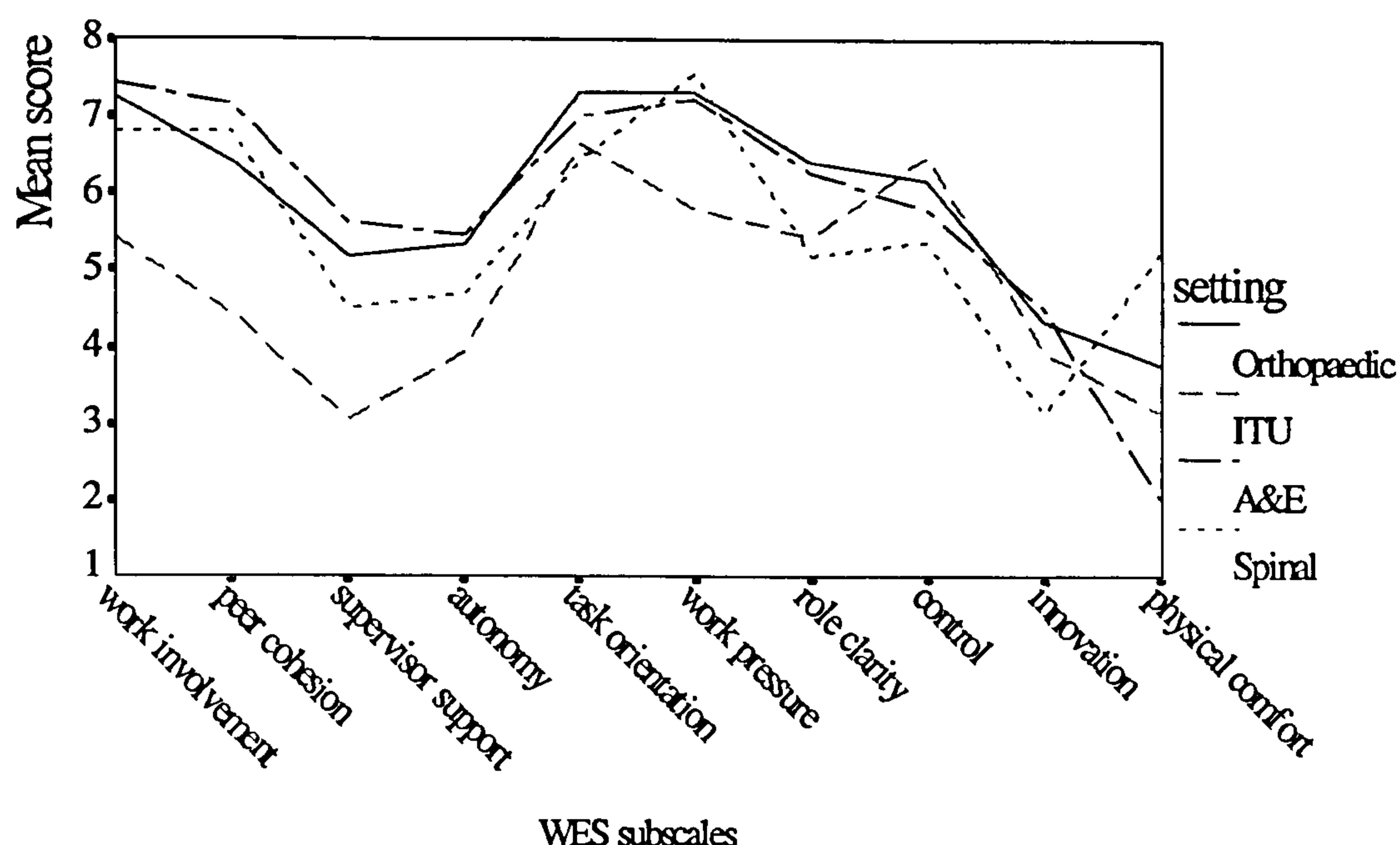
The most commonly used coping strategies were active coping, acceptance, emotional support and planning. The least used coping strategies were behavioural disengagement, alcohol/drug use, denial and religion. On the Social Support Questionnaire participants had an average of 4 social supports for each question, and were generally highly satisfied (31.6 / 36).

In order to compare the scores obtained on the MBI and WES to established UK norms a series of one sample t-tests were performed. On the MBI compared to Firth et al (1985) the present sample had a significantly higher level of emotional exhaustion ( $t=3.92$ ,  $d.f.=59$ ,  $p<.001$ ). On the WES compared to Baker et al (1992) the present sample had higher levels of work pressure ( $t=5.67$ ,  $d.f.=59$ ,  $p<.001$ ) and clarity ( $t=6.27$ ,  $d.f.=59$ ,  $p<.001$ ), and lower levels of autonomy ( $t=-3.37$ ,  $d.f.=59$ ,  $p<.01$ ) and innovation ( $t=-4.14$ ,  $d.f.=59$ ,  $p<.001$ ). Compared to a normative group of German adults (Schwarzer, 1992) this sample had a higher GSES self-efficacy score ( $t=4.98$ ,  $d.f.=59$ ,  $p<.001$ ). (See Appendix IX.4)

In order to test for differences between settings a series of one-way ANOVAs were performed on GHQ, MBI, GSES, SSQ6 and WES subscales. For the B-COPE subscales a number of Kruskal-Wallis non-parametric tests were used.

No differences were found in levels of distress or coping strategies used. The analyses showed significant differences between settings in the following variables: WES subscales work involvement ( $F_{3,56}=3.87$ ,  $p<.05$ ), peer cohesion ( $F_{3,56}=8.48$ ,  $p<.001$ ), supervisor support ( $F_{3,56}=3.58$ ,  $p<.05$ ), work pressure ( $F_{3,56}=2.77$ ,  $p<.05$ ) and physical comfort ( $F_{3,56}=9.29$ ,  $p<.001$ ); and number of social supports on the SSQ6 ( $F_{3,56}=3.97$ ,  $p<.05$ ). Scheffe post-hoc analyses indicated: on WES work involvement ITU had a low level and A&E a high level; on WES peer cohesion ITU had a low level; on WES supervisor support A&E had a high level; on WES work pressure ITU had a low level; on WES physical comfort Spinal had a high level; and on SSQ6 number of social supports Orthopaedic had a high level. The profile of WES subscale scores are shown graphically in Figure 2 (following Moos, 1986).

Figure 2: Profile of WES subscale scores for each setting.



### 3.3.3 Differences between grades of staff

In order to investigate the relation between grade and the distress variables, B-COPE and WES subscales a series of one-way ANOVAs and Kruskal-Wallis analyses were performed. The participants were placed into 3 groups: those in grade D; those in grade E; and the grades F, G and H were collapsed into one group in order to obtain sufficient numbers for the analyses. There is some face validity in this since it is at grade F that nursing staff first receive managerial responsibility.

One-way ANOVAs followed by Scheffe post-hoc analyses indicated that staff in higher grades were older ( $F_{2,79}=3.88$ ,  $p<.05$ ), had been qualified for longer ( $F_{2,79}=5.03$ ,  $p<.01$ ), had worked longer in their speciality ( $F_{2,79}=16.72$ ,  $p<.001$ ), had higher levels of GSES self-efficacy ( $F_{2,57}=6.87$ ,  $p<.005$ ), and higher levels of WES innovation ( $F_{2,57}=5.31$ ,  $p<.01$ ). Lower grades had higher levels of WES work involvement ( $F_{2,57}=5.31$ ,  $p<.01$ ) and WES task orientation ( $F_{2,57}=3.42$ ,  $p<.05$ ) (see Appendix IX.5).

Kruskal-Wallis analyses found differences between grades in years on ward ( $H=15.46$ ,  $d.f.=2$ ,  $p<.001$ ), with higher grade more; extra hours worked ( $H=9.19$ ,  $d.f.=2$ ,  $p<.05$ ),



higher grade more; percentage of time spent in direct contact with patients ( $H=11.11$ ,  $d.f.=2$ ,  $p<.005$ ), higher grade less; COPE self-distraction ( $H=6.62$ ,  $d.f.=2$ ,  $p<.05$ ), grade E lower than D or FGH; and COPE active coping ( $H=6.29$ ,  $d.f.=2$ ,  $p<.05$ ), grade E lower than D or FGH.

A 2-way ANOVA was performed to investigate any interaction between setting and grade for the outcome distress measures. No main effects or interactions were found to be significant for any of the outcome measures.

### 3.4 Qualitative results

The results reported in this section are taken from the interviews with participants. They are included to give some indication of the actual stressors faced in each setting and a flavour of the responses received. A somewhat more comprehensive summary of responses received is given in Appendix X, together with numbers of participants giving a particular response.

#### 3.4.1 Ward information

The following information about each ward was provided by the nurse in charge and is included here to give some indication of the different approaches adopted within each setting. The wards showed a range of duration of stay. Each setting used bank staff each day to complement their staffing levels. As judged by the nurse in charge none of the wards reached their ideal staff:patient ratio (see table 4).

Table 4: Information about the settings given by the nurses in charge of wards.

	Orthopaedic	ITU	A&E	Spinal
average duration patient stay	14 days	4 days	4 hours	5 months to 10+ months
actual nurse: patient ratio	1:6	1:1	16 over 24 hours for 100 patients	varies with shift 1:3.5 and 1:6
ideal nurse: patient ratio	3:6	1:1 plus 1 in charge	as above but better skill mix	1:2.5 and 1:5
bank staff used	1 each shift	6 shifts / week	1 to 2 each shift	1 each shift

### 3.4.2 Main themes

The best aspects of the job were seen by the vast majority of participants as the patient contact, patient improvement, and working in a team with people that they liked. The worst and most pressurising aspects of the job were seen as the high workload and lack of staff (mentioned by n=56), especially obtaining the right skill mix and having enough experienced staff. In addition to these, other common themes were poor communication in general and with doctors specifically, and specific themes of abusive patients (A&E, Spinal), dealing with death especially children (ITU), lack of hospital beds (A&E, Orthopaedic)

Overall 37 participants said they thought their work setting was more stressful than the average hospital ward, 31 said it was about the same and 14 said it was less. The Orthopaedic ward staff said 'more' the most often and ITU said the 'same' or 'less' most often (full table in Appendix X). For the question whether people thought about work outside of work the responses were divided into three categories; thinking about the past especially what they had forgotten or could have done better; thinking about the future such as what the next shift would entail; and thinking about particular patients. Overall it was most common to think about what one had recently done (n=26), reflect on one's performance and what might have been forgotten. Next most common was to think about particular patients (n=20), and this was especially prominent in ITU.

### 3.4.3 Comments

General comments were varied (see Appendix X) but some themes could be extracted and are given below with direct quotes.

Stress is very much affected by other individuals: "calm colleagues cause tension also"; "anxiety transmits through the ward"; "if head person is stressed it affects all others"; "higher grades have to take others' strain"; "need support from within the unit not outside"; "stress caused by personality clashes"; "support all depends on individuals".

Some participants felt that good work is not given credit: “responsibility without reward”; “no acknowledgement of good work”; “get blame without credit”; “lack acknowledgement of good work”; “no-one says anything when we’re doing things well, only if we make a mistake”.

There were many comments about the NHS and the process of change that it has undergone. Among the responses were: “like work, hate the system”; “NHS changes have caused stress”; “nursing is changing and not for the better”; “it’s becoming more and more difficult to do proper nursing”.

Other comments were more idiosyncratic eg “if I hear the safety belt bell in Safeways it reminds me of the call buzzer”.

#### **3.4.4 Ideas for change**

Overall 48 participants indicated that the change that they would most like to see is for there to be more staff. Other comments were:

Orthopaedic (n=16): more staff - 6; less paperwork - 2; more ward meetings - 3; more ward rounds; better bed management.

ITU (n=20): more staff - 6; promotion - 4; have study time/budget - 4; windows - 3; better communication with medics - 6; more training - 6; a specific ITU consultant; have case conferences - 2; alter shift pattern - 3; follow-up relatives of dead

A&E (n=22): more staff - 18; better physical layout - 6; more equipment - 4; change top management - 5

Spinal 1 (n=12): more staff - 7; better leadership - 4; better communication - 3; more teaching - 3; more ward meetings - 3; respect from medics - 4

Spinal 2 (n=12); more staff - 11; change shifts - 4; more ward meetings - 3; more teaching - 3



### 3.5 Hypothesis Testing

The Hypotheses 1 to 5 investigated particular factors associated with the distress variables and were tested by correlational analyses on the entire sample (see Table 5). From the Kolmogorov-Smirnov tests performed earlier, correlations which involved both variables that did not differ from the normal distribution were correlated using Pearson's correlation coefficient. Correlations including those variables that differed significantly from the normal distribution (WES work pressure, B-COPE subscales) were correlated using Kendall's correlation coefficient.

#### 3.5.1 Hypothesis 1: *Increased age will be associated with decreased levels of distress.*

There was a significant negative correlation between age and the emotional exhaustion ( $r = -.29, p < .05$ ) and depersonalization ( $r = -.29, p < .05$ ) subscales of the MBI. There was not a significant association between age and GHQ score ( $r = -.21, n.s.$ ) or age and personal accomplishment ( $r = .09, n.s.$ ). Hence some evidence exists to support the first hypothesis. Furthermore significant negative correlations between years qualified and emotional exhaustion ( $r = -.31, p < .05$ ) and depersonalization ( $r = -.29, p < .05$ ).

#### 3.5.2 Hypothesis 2: *High self-efficacy will be associated with decreased levels of distress.*

There was a significant positive correlation between GSES score and personal accomplishment ( $r = .44, p < .001$ ). However GSES score did not correlate significantly with GHQ ( $r = -.26, p = .051$ ), emotional exhaustion ( $r = -.063, n.s.$ ) or depersonalization ( $r = -.14, n.s.$ ). Thus there is no evidence in support of the hypothesis that high levels of self-efficacy are associated with decreased levels of distress, but there is evidence that high levels of self-efficacy are associated with high levels of a positive outcome measure.

### 3.5.3 Hypothesis 3: *High satisfaction with social support will be associated with decreased levels of distress.*

Satisfaction with social supports as measured by the SSQ6 was significantly negatively correlated with GHQ ( $r=-.46$ ,  $p<.001$ ), emotional exhaustion ( $r=-.30$ ,  $p<.05$ ) and depersonalization ( $r=-.28$ ,  $p<.05$ ). There was a positive correlation between satisfaction with social supports and personal accomplishment ( $r=.37$ ,  $p<.005$ ). Further correlations were performed between the WES subscale supervisor support and the distress measures. These showed supervisor support correlated negatively with GHQ ( $r=-.38$ ,  $p<.005$ ) and emotional exhaustion ( $r=-.31$ ,  $p<.05$ ). Work Relationship Index (summed total of WES work involvement, peer cohesion and supervisor support) correlated negatively with GHQ ( $r=-.33$ ,  $p<.01$ ) and emotional exhaustion ( $r=-.26$ ,  $p<.05$ ), and positively with personal accomplishment ( $r=.33$ ,  $p<.01$ ). Hence there is strong evidence to support the hypothesis that social support is associated with decreased levels of distress.

### 3.5.4 Hypothesis 4: *A greater number of coping strategies used will be associated with increased levels of distress. In particular increased levels of distress will be associated with avoidant coping strategies, such as behavioural disengagement and alcohol/drug use.*

A variable Total Coping was created by summing each of the subscale scores. This new variable did not differ from the normal distribution over the whole sample (Kolmogorov-Smirnov  $Z=.577$ , n.s.). The only significant correlation with outcome variables was a positive relation with personal accomplishment ( $r=.28$ ,  $p<.05$ ).

To investigate the association between the various B-COPE subscales and the distress measures a series of Kendall's correlational analyses were performed. These showed only a few significant associations: a negative correlation between GHQ and active coping ( $\tau=-.22$ ,  $p<.05$ ); positive correlations between depersonalization and alcohol/drug use ( $\tau=.22$ ,  $p<.05$ ) and humour ( $\tau=.24$ ,  $p<.05$ ); and a positive correlation between personal accomplishment and emotional support ( $\tau=.22$ ,  $p<.05$ ). Hence data provides meagre evidence for the 4th hypothesis. (Intercorrelations of B-COPE subscales and correlations with other variables in Appendix IX.6.)

**3.5.5 Hypothesis 5:** *Levels of distress will be affected by factors in the work environment. In particular increased levels of distress will be associated with increased levels of work pressure and work involvement, and decreased levels of supervisor support.*

Outcome variables were correlated with WES subscales. Work pressure correlated positively with emotional exhaustion ( $r=.24$ ,  $p<.05$ ). Work involvement correlated positively with personal accomplishment ( $r=.32$ ,  $p<.05$ ). Supervisor support correlated negatively with GHQ ( $r=-.38$ ,  $p<.005$ ) and emotional exhaustion ( $r=-.31$ ,  $p<.05$ ). Thus some evidence exists to support the hypotheses as stated. There were other significant correlations between distress variables and WES subscales: for peer cohesion there was a negative correlation with GHQ ( $r=-.29$ ,  $p<.05$ ) and a positive correlation with personal accomplishment ( $r=.35$ ,  $p<.01$ ); task orientation correlated negatively with emotional exhaustion ( $r=-.32$ ,  $p<.05$ ) and depersonalization ( $r=-.29$ ,  $p<.05$ ); clarity correlated negatively with emotional exhaustion ( $r=-.33$ ,  $p<.01$ ); and physical comfort correlated positively with personal accomplishment ( $r=.21$ ,  $p<.05$ ). Hence it seems that levels of distress are associated with particular factors in the work environment. (Intercorrelations of WES subscales and correlations with other variables in Appendix IX.7.)



Table 5: Correlations between distress variables and all other variables. Pearson's correlational analysis used except where indicated by (+) when Kendall's correlational analysis is used.

variable	GHQ	EE	DP	PA
EE	.61****			
DP	.26*	.68****		
PA	-.32*	-.35**	-.25	
GSES	-.26	-.06	-.14	.44****
INVL	-.15	-.18	-.06	.32*
COHN	-.29*	-.15	.01	.35**
SUPP	-.38**	-.31*	-.12	.20
AUTN	-.05	-.14	-.18	.14
TASK	.03	-.32*	-.29*	.15
PRES(+)	.12	.24*	.17	-.04
CLAR	-.21	-.31*	-.33**	.22
CNTL	.25	.02	-.14	-.17
INNV	-.19	-.25	-.05	-.03
COMF	-.03	-.15	-.09	.28*
DIST(+)	-.05	-.03	-.00	.10
ACTV(+)	-.22*	-.13	-.12	.16
DEN(+)	.06	.01	.08	-.02
ALC(+)	.14	.16	.22*	-.05
EMOT(+)	-.03	-.06	-.05	.22*
BDIS(+)	.08	-.06	.08	.09
VENT(+)	.03	.05	.08	.00
POSI(+)	-.11	-.00	-.12	.16
PLAN(+)	-.15	-.06	-.07	.15
HUM(+)	-.04	.13	.24*	-.04
ACC(+)	-.17	.00	.03	.08
RELN(+)	-.02	.02	-.03	.14
SSNO	-.16	-.11	.03	.16
SATIS	-.46****	-.30*	-.28*	.37***
AGE	-.21	-.29*	-.29*	.09
QUAL	-.19	-.31*	-.29*	.13
SPEC	-.10	-.11	-.16	.06
WARD (+)	.04	-.03	-.08	-.09
HOURS (+)	.12	.20*	.11	-.01
EXTRA (+)	.09	.18	.16	-.05
PERC (+)	-.02	-.15	-.14	.21*
TIME(+)	.10	.09	.01	-.05

\*p<.05, \*\*p<.01, \*\*\*p<.005, \*\*\*\*p<.001

GHQ, General Health Questionnaire: Maslach Burnout Inventory Subscales; EE, emotional exhaustion; DP, depersonalisation; PA, personal accomplishment: GSES, Generalised Self-Efficacy Scale: Work Environment Scale Subscales; INVL, work involvement; COHN, peer cohesion; SUPP, supervisor support; AUTN, autonomy; TASK, task orientation; PRES, work pressure; CLAR, clarity; CNTL, control; INNV, innovation; COMF, physical comfort: Brief COPE subscales; DIST, self-distraction; ACTV, active coping; DEN, denial; ALC, alcohol/drug use; EMOT, emotional support; BDIS, behavioural disengagement; VENT, venting; POSI, positive reframing; PLAN, planning; HUM, use of humour; ACC, acceptance; RELN, religion: Social Support Questionnaire; SSNO, total number of social support; SATIS, satisfaction with social support: Other; QUAL, years qualified; SPEC years in speciality; WARD, years on ward; EXTRA, extra hours worked; PERC, % direct patient contact; TIME, for interview.

### **3.5.6 Hypothesis 6: *Levels of distress will be predicted more by health care system factors or by personal system factors.***

In order to investigate Hypothesis 6 a stepwise variable selection multiple regression was performed to create a predictive model for each of the outcome measures.

Multiple regression has been used in a similar fashion in other studies with different populations (Baglioni, Cooper & Hingley, 1990; Landeweerd & Boumans, 1994; Savicki & Cooley, 1994). In this case the GHQ, emotional exhaustion, depersonalization and personal accomplishment scores were used in turn as the dependent variables. The independent variable included were WES subscales, B-COPE subscales, SSQ6 subscales, GSES score and demographic/work related data from interview (age, years qualified, years in speciality, years on ward, hours worked, extra hours worked, estimate of percentage time in direct contact with patients, time for interview).

Further categorical variables were created for inclusion from interview data for inclusion in the regression. For sex, male gender had the value 0 and female the value 1. Marital status was collapsed to married / cohabiting (1) versus single / separated / divorced / widowed (0). Number of dependants was collapsed to either having one or more (1) or not having any (0). 2 variables were created to investigate the effects of grade of participant; a 'grade E' variable which was scored 1 if participant was grade E and 0 otherwise, and a 'grade FGH' variable which scored 1 if participant was grade F, G or H and 0 otherwise.

All variables were initially put into the statistical procedure, which selects variables one at a time in order to build a model that will account for the greatest amount of variance possible in the dependent measure. Variables are added to the model if a further significant amount of variance is accounted for.

Table 6: Stepwise variable selection multiple regression tables for distress variables as dependent variables. Within each model variables listed in order selected. Includes standardised regression coefficients and partial regression coefficients.

Dependent variables	Independent variables selected for model	B	Beta	T
GHQ score	SSQ6 satisfaction	-.451	-.420	-4.53 ****
	WES supervisor support	-.600	-.313	-3.40 ***
	COPE acceptance	-.563	-.177	-1.91
	Hours worked	.301	.478	3.92 ****
	Dependants	2.92	.312	2.58 *
	WES control	.869	.275	2.87 **
	Sex	-3.49	-.231	-2.51 *
	adjusted $R^2 = .570$			
emotional exhaustion	WES work pressure	2.13	.360	3.74 ****
	SSQ6 satisfaction	-.897	-.343	-3.50 ***
	WES task orientation	-2.41	-.297	-2.96 ***
	Years on ward	-.734	-.245	-2.56 *
	% direct patient contact	-.239	-.304	-3.14 ***
	WES supervisor support	-1.05	-.223	-2.22 *
	WES physical comfort	-1.09	-.204	-2.11 *
	adjusted $R^2 = .499$			
depersonalization	Sex	-4.33	-.263	-2.42 *
	SSQ6 satisfaction	-4.11	-.355	-3.24 ***
	WES task orientation	-1.35	-.376	-3.38 ***
	Years on Ward	-.401	-.302	-2.73 **
	Marital status	-3.27	-.264	-2.41 *
	adjusted $R^2 = .345$			
personal accomplishment	GSES self-efficacy	.531	.344	3.36 **
	COPE emotional support	.857	.253	2.50 *
	WES physical comfort	.771	.276	2.75 **
	% direct patient contact	.135	.328	3.23 ***
	WES work involvement	.836	.268	2.58 *
	adjusted $R^2 = .441$			

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .005$ , \*\*\*\* $p < .001$

The models show that 7 variables account for 57.0% of the variance in GHQ score; 7 variables account for 49.9% of the variance in emotional exhaustion (EE); 5 variables account for 34.5% of the variance in depersonalization (DP); and 5 variables account for 44.1% of the variance in personal accomplishment (PA). The single biggest predictors for each of the outcome measures were satisfaction with social supports (SSQ6) for GHQ (19.2%), WES work pressure for emotional exhaustion (13.9%), male gender for depersonalization (9.0%), and GSES self-efficacy for personal accomplishment (20.2%).



Satisfaction with social supports as measured by the SSQ6 appeared in the models for GHQ, EE and DP, and the WES subscale supervisor support in the models for GHQ and EE. High levels of both of these variables predicted lower distress scores. In the models for EE and DP higher levels of WES task orientation predicted lower levels of distress. A high level of WES physical comfort was associated with low EE and high PA in their respective models. Years on ward was in the models for EE and DP, with longer time on ward associated with lower levels of distress. Percentage direct contact with patients was in the models for EE and PA, with greater patient contact associated with lower levels of distress.

With respect to the hypothesis it appears that both personal system and health care system factors help predict distress. For general mental well-being (GHQ) more variables in the model were personal system factors, whilst for work-specific distress (emotional exhaustion) more variables in the model were work environment and health care system factors. Hence there is some dissociation between the outcome measures as to which factors are most predictive.

In order to check that the basic assumptions of the statistical model held for these models the standardised residuals were checked to see if they differed from the normal distribution. For each of the models this was found not to be the case (using the Kolmogorov-Smirnov test, dependent variable GHQ,  $Z=.47$  n.s.; EE,  $Z=.48$  n.s.; DP,  $Z=.90$  n.s.; PA,  $Z=.69$  n.s.). Hence the models produced were statistically secure.

### **3.6 Further analyses**

#### **3.6.1 Relationship between coping and work environment**

One aim of the research (though without explicit hypotheses) was to explore the relationship between coping and the work environment (Dewe, 1993). There were few significant correlations between the COPE subscales and the WES subscales using Kendall's correlational analysis. Use of self-distraction was positively associated with work pressure ( $\tau=.21$ ,  $p<.05$ ) and physical comfort ( $\tau=.23$ ,  $p<.05$ ). Alcohol/drug use correlated positively with work pressure ( $\tau=.29$ ,  $p<.01$ ) and negatively with clarity

( $\tau = -.29$ ,  $p < .01$ ). Behavioural disengagement correlated positively with task orientation ( $\tau = .24$ ,  $p < .05$ ). Humour correlated positively with supervisor support ( $\tau = .22$ ,  $p < .05$ ) and negatively with control ( $\tau = -.29$ ,  $p < .01$ ). (See Appendix IX.6)

### **3.6.2 What fosters self-efficacy?**

To investigate this a stepwise variable regression analysis was performed with GSES self-efficacy score as the dependent variable and WES, B-COPE, demographic and distress/'outcome' variables as the independent variables. This produced an 8 variable model that explained 64% of the variance in GSES score. Higher GSES score was predicted by more years qualified and in speciality, higher personal accomplishment, more active coping, higher grade and greater work involvement. Higher behavioural disengagement predicted lower GSES. The first variable added to the model was years in speciality and accounted for 23% of the variance (see Appendix IX.8).

### **3.6.3 Choice of speciality**

Differences between those who chose their particular speciality versus those who did not were investigated. Two groups were formed: those who did choose their speciality ( $n=47$ ) and those who did not ( $n=13$ ). Using t-tests no significant differences on any of the measures were found.

## 4.0 Discussion

Within this section the results are summarised, methodological issues addressed and interpretations of the findings made. Following this, clinical implications and theoretical issues are discussed, with potential future research highlighted.

### 4.1 Summary of results

This study presents a wealth of information on the factors associated with psychological and occupational distress in nurses including both qualitative and quantitative data. Among the main findings are that no differences were observed between settings in outcome or coping variables but some differences between settings were found in work environments. ITU had low levels of work pressure, work involvement and peer cohesion. A&E had high levels of work involvement and supervisor support. Spinal had high levels of physical comfort.

With regard to the hypotheses, as predicted age was negatively correlated with distress; self-efficacy correlated positively with personal accomplishment, but was not associated with levels of distress; satisfaction with social support was an important correlate of all the outcome measures with higher support associated with lower distress; work pressure correlated positively with emotional exhaustion, work involvement correlated positively with personal accomplishment, supervisor support correlated negatively with GHQ score and emotional exhaustion, and other factors in the work environment also had significant associations with outcome measures. There were few correlations between coping subscales and distress but those that existed were in the predicted direction eg GHQ score correlated negatively with active coping.

The regression analyses indicated that for general mental well-being individual factors (especially social support) explained more variance in outcome measures (GHQ) than did health care system factors. However for the emotional exhaustion subscale of burnout factors in the work environment were the more important (eg high work



pressure, low task orientation, low percentage of direct patient contact).

## **4.2 Methodological Issues**

### **4.2.1 Participants**

The response rate obtained was satisfactory. It was enhanced by the thorough process of consultation and introduction to the various managerial levels and staff groups. Those not returning questionnaire packs differed from those who did only in a higher estimated percentage of time spent in direct contact with patients. Since more patient contact was related to better outcome in the regression models it appears that generally the sample is a fair reflection of the potential population. However it may be the case that the most burned out nurses have left the settings.

The particular choice of wards will also have affected the results. These wards were all keen to participate, and although chosen for their different ways of working other wards could have been used. Other settings may have been too exhausted to participate in a research project. Greater participant numbers would have been ideal by looking at other wards but within the constraints of time it seemed unfeasible.

### **4.2.2 Interview**

On average the interviews were of relatively short duration and longer ones may have given more opportunity to explore issues. However some of the interviews were long and all participants had the opportunity to arrange further meetings. None did so but many further comments were received informally.

Responses are likely to have been dependent on recent ward atmosphere; different answers might have been received if seen at another time point. Furthermore participants were seen over a period of a few months during which time changes are likely to have occurred.

The estimates of how many extra hours worked in a week and the percentage of time spent working in direct contact with patients are not well defined objective questions

but rely on participants' perceptions. These seem worth developing further because of their appearance in regression models for emotional exhaustion and personal accomplishment.

### 4.2.3 Measures

In general the measures used were well-established and completed without difficulty. This study did not look at causes of nursing stress using a standardised questionnaire but did pick up trends in the interview. It is also not possible to compare the relative importance of these various stressors.

It is worth noting that as the WES requires a descriptive judgement of what the respondent encounters, it does not measure morale or work satisfaction, which require affective judgements. It does however address those dimensions of the work environment which contribute to them (Moos & Schaefer, 1987). However work related factors (eg work demands, role conflict) need to be better distinguished from organisational climate (eg wider communication in Trust).

Self-efficacy is a relatively newly conceptualised, but potentially important, aspect of an individual's ability to deal with work stressors but has not been used in previous such investigations. Its validity in such a setting needs to be further established.

There were a relative paucity of significant results involving B-COPE subscales. This may be explained by the fact that the brief version of the COPE used here consisted of only 2 items per subscale which allows only a limited range of values. Furthermore the psychometric properties of it have yet to be firmly established although some preliminary supporting evidence is available (Carver et al, 1993). However the full 60 item COPE and other coping measures were inappropriate or too lengthy in an already dense questionnaire pack. Furthermore coping questionnaires cannot measure unconscious defences.

### 4.2.4 Analyses

It is tempting to infer a unidimensional causal pattern, especially in using a cross-

sectional design. As this study is correlational other interpretations may be put forward. Relationships are bidirectional and whilst particular relationships can be specified they represent just one phase of a dynamic process. Hence appropriate caution must be applied when interpreting the results.

Although many correlations were statistically significant they were at a low absolute level ( $r < .4$ ) and hence it is important not to overestimate their clinical significance. Larger numbers in the regression analyses would be preferable, but the models produced contain a maximum of 7 variables which, in comparison to the sample of 60, may be considered adequate. Furthermore the large number of analyses performed mean that a few significant results may have occurred by chance.

### **4.3 Interpretation of results**

#### **4.3.1 Levels of distress**

25% of this sample reached GHQ-12 cut-off for minor psychiatric disorder. This compares to 17.8% of all people working and 28.5% of nurses in NHS Trusts in the current NHS Workforce Initiative (Borrill et al, 1996). There were higher levels of emotional exhaustion than previous research in the UK has indicated (Firth et al, 1985) and higher levels of WES work pressure than UK normative values (Baker et al, 1992). This may be related to continuing organisational change and financial constraints on the health service.

Finding similar levels of distress across settings is consistent with previous research (eg Hipwell et al, 1989; Van Servellen & Leake, 1993). It may be that the similarities across settings outweigh the differences, or that people choose the particular speciality best suited to them. However those who did not choose to enter their particular speciality showed no differences from those who did. Some lack of awareness of the stressors faced by those in other areas may be indicated since 37 participants said they thought that their setting was more stressful than other nursing settings (31 said 'the same').



It has been argued that chronic stressors will deplete reserves more than acute ones (Ogus, 1994). The finding that levels of distress are similar across settings indicates that it is not necessarily the types of patient or nature of individual work tasks per se but the chronicity of the psychological experience of the work environment that is important.

#### **4.3.2 Demographic Factors**

Support is found for a negative association between age (and experience) and burnout (Robinson et al, 1991; Williams, 1989). Tyler & Cushway (1995) suggested that with increasing seniority comes more responsibility and work pressure. However these results show that perceived work pressure is similar across grades. Furthermore greater rewards may exist for higher grades, showing significantly higher levels of innovation, feeling more able to facilitate change in the setting. This also relates to the higher levels of self-efficacy found in more experienced staff, feeling more able to deal with novel and difficult situations. Borrill et al's (1996) result that on the GHQ more senior staff had more stress was not found, perhaps because of low numbers of such senior staff. Baker et al (1992) found that higher grades showed more WES work involvement but these results are the reverse with lower grades scoring more highly. Such concern and commitment to the job needs to be fostered. A lower level of work involvement in the higher grades may possibly indicate some disillusionment with the particular posts, but this is speculative.

From the model for depersonalization being married is seen to be a protective factor, probably due to increased social support (Tyler & Ellison, 1994). Hence it may be useful to examine family and personal social functioning further in some detail. This is supported by many participants indicating that one of the ways that they coped with stress at work was to talk with their partner at home. Others commented however that it was a relief to go to work to get away from the home situation. Having dependants was found to be related with decreased levels of general mental health from the regression model.

Inclusion of the variable sex in the models, with male gender associated with more

distress, may be an experimental artefact due to low numbers of male participants. Borrill et al (1996) found that female managers and doctors had worse mental health than male counterparts and that this could not be accounted for by work-related factors. They speculate that NHS culture and hierarchies are implicated. It is uncertain how this effects a female dominated profession such as nursing. Armstrong-Stassen, Al-Ma'Aitah, Cameron & Horsburgh (1994) reported that stress was caused by the gendered structure and power differential between male doctors and female nurses in their sample.

#### **4.3.3 Work related factors**

The work environment, a characteristic not well explored in most past studies, seems relatively important in this study with a predictive role in the models for outcome.

The fact that compared to UK normative data (Baker et al, 1992) this sample had higher work pressure and clarity and lower autonomy and innovation may indicate that as workload has increased the work has become more routinised. High workload and lack of staff was the most commonly mentioned aspect of work during the interviews.

High levels of the burnout subscales emotional exhaustion and depersonalization were associated with low role clarity and low task orientation; this corresponds with previous research which investigated role ambiguity (Duquette et al, 1994; Firth et al, 1986, 1987). The importance of workload can be seen in the model for emotional exhaustion and adds to a growing body of evidence (Tyler & Cushway, 1992, 1995; Hipwell et al, 1989; Robinson et al, 1991; Landeweerd & Boumans, 1994). As workload increases nurses spend less time with individual patients, and thus feel that they are not doing their job properly or as they might like which increases distress. Dealing with patients is seen to be the most positive aspect of the work and this is being eroded.

This study shows that amount of time spent with patients may be of more importance than previous research indicated. Maslach & Jackson (1981) found a positive

association between burnout and time spent with patients. Others (eg Hare & Pratt, 1988) found no such relationship. In this study the estimate of percentage time in direct contact with patients correlated positively with personal accomplishment and was also present in the regression model for emotional exhaustion, with more time spent with patients leading to less exhaustion. It appears that the satisfaction derived from patient contact (as also seen in the interview responses) is a powerful positive factor and when not with patients nurses are likely to be performing other demanding tasks such as paperwork which carry less immediate rewards. It is also possible that those who are happier in their work overestimate the amount of time they spend with patients and those who are less happy underestimate it.

The physical comfort of the work environment contributes to increased personal accomplishment. Good physical surroundings may make it easier to work well or it may be that those who feel happier at work perceive the conditions differently. Such factors seemed important in the A&E department where the physical layout and lack of space was seen as a problem, and in ITU where the lack of windows was described as “depressing”. The significant result that perceived physical comfort was highest in the Spinal setting is unsurprising since it is based in a relatively new and well-appointed facility in comparison to the rest of the hospital.

Those working less hours (ie part-time) had lower levels of distress. Hours worked was present in the regression model for general mental well-being and correlated positively with emotional exhaustion. It may be that working less hours allows one to become less involved in some aspects of the work or that outside responsibilities tend to put into perspective the stressful aspects. Overall the estimated extra total hours worked by the sample per week was 145.1 which is equivalent to 3.9 whole time equivalent extra staff (admittedly this is from self-estimates).

#### **4.3.4 Effects of social support**

As predicted this study strongly supports evidence indicating the importance of social support as a protective factor against distress (Duquette et al, 1994); from both a direct measure of general support and aspects of the work environment (peer cohesion and



supervisor support). This was especially true for general mental well-being. Comments at interview again supported this view since most people coped with stress at work by talking to colleagues or family and friends. The number of social supports that an individual had was not associated with any outcome measures but high satisfaction with social supports was associated with lower levels of distress.

Social support may be particularly important in some settings. In Spinal nurses have to deal with the impact of injuries on patients and their adjustment reactions, which some commented as being a difficult aspect of the work, perhaps especially if one's own satisfaction with social support is low. However our results showed no differences between settings. The overall high level of satisfaction with social support may indicate that intrinsic stressors may not be that stressful, or simply that participants feel able to cope with them at the moment (Tyler & Cushway, 1995).

Tyler & Cushway (1995) have argued that social support does not help particular types of organisational stress. However they did not clearly distinguish between stress as an agent vs. stress as an outcome and seem to be referring to organisational stressors rather than distress as investigated by this study.

#### **4.3.5 Effects of coping**

It is encouraging that the coping strategies most used were those generally considered to be adaptive (active coping, acceptance, emotional support and planning). These contain both problem-focused and emotion-focused strategies, whereas previous research indicate that emotion-focused strategies were predominantly used by such a group (Dewe, 1987). Those strategies least used are generally regarded as maladaptive (behavioural disengagement, alcohol/drug use and denial).

Although there were few significant associations between outcome and coping strategies general mental well-being was related to active coping and also acceptance (Tyler & Cushway, 1992, 1995). The relative lack of correlations between B-COPE subscales and distress measures may indicate the relative unimportance of such measures with this population for work-related outcomes. This is consistent with

previous research (Tyler & Cushway, 1995). The use of more coping strategies (high level of total coping) was associated with higher levels of personal accomplishment, perhaps because participants then feel as if they are managing the situation.

Contrary to Tyler & Cushway (1992) higher work pressure was positively associated with less adaptive coping strategies (alcohol/drug use and self-distraction) rather than more active strategies. This may indicate that as work pressure increases it is harder to employ the adaptive coping strategies that people may wish to, which will in turn increase distress. When it is felt that one cannot change the stressors emotion focused coping will predominate.

#### **4.3.6 Prediction of outcome**

An important contribution of this study lies in the production of regression models for the outcome variables, in which relatively high proportions of variance are accounted for. For general mental well-being it appears that the variables in the personal system have more predictive value than health care system factors; included in the model were social support, active coping, sex, and dependants. However for burnout / work-specific distress factors in the work environment seem to be of greater importance, especially for the subscale emotional exhaustion which can be seen as the core of the burnout concept; the model included the work environment subscales work pressure task orientation, supervisor support and physical comfort, and also years on ward and percentage time spent in direct contact with patients. Hence important differences exist between general and work-specific outcome. This provides support for the dissociation between work stress and general mental well-being (Tyler & Cushway, 1995). Past studies have tended to investigate one or the other but not both and intervention strategies will need to be clear which they are trying to address; if it is burnout work environment factors must be considered.

The personal accomplishment subscale of the MBI correlated highly with self-efficacy (and was the most important predictor in the regression model) thus showing that an individual's general beliefs about their ability and work are important. Tackling self-efficacy and such beliefs thus seems important. It has been found that increases in

self-efficacy preceded the adoption and maintenance of health promoting behaviours in a review of health promotion programmes (Redland & Stuifbergen, 1993). Overall participants' personal accomplishment was enhanced if they felt they could deal with difficulties (self-efficacy), have a high level of patient contact, have good surroundings and physical facilities, and are satisfied with their social support.

#### **4.4 Clinical Implications**

There are 3 main approaches to managing work stress (Dewe, 1993): (a) change the working conditions; (b) initiate stress management programmes; (c) identify interventions based on the relationship between the individual and the environment (Lazarus, 1994). Placing responsibility on individuals does not guarantee resolution of organisational problems. A change in the working conditions may not help all employees. Some joint approach would appear most sensible with intervention strategies targeted at those most in need whilst promoting positive work conditions and minimising the negative impact of stressors less amenable to change.

##### **4.4.1 Individual Factors**

General mental well-being is associated with individual system factors and hence stress management interventions for individuals may be of use. These can be provided by targeting those individuals in need and providing access via occupational health, or alternatively in groups. Suitable bases for grouping workers must be found for this kind of stress management to work eg ward, age, grade. Ideally stress management should not be for individual dysfunction but to promote individual control over working conditions (Latack & Havlovic, 1992). The results indicating the importance of health care system factors imply only seeking to screen individuals with difficulties would be of limited utility.

In this study younger members of staff are more likely to be experiencing distress. Hence there is an increased need for management and staff to be aware of younger nurses' issues and to provide sufficient support early in their careers.



A number of recent studies have demonstrated some utility in stress management related interventions for nurses and other health service professionals. Jones & Johnston (1995) reduced affective distress in student nurses with a 6 session relaxation intervention. Lee & Crockett (1994) found assertiveness training to be effective in combating stress, through 6 workshops (n=60). Freedy & Hobfoll (1994) found that stress inoculation training (n=87) helped levels of distress at 5 week follow-up for those with low social support. Reynolds, Taylor & Shapiro (1993) showed 6 sessions of stress management training produced lower psychological distress but no change in job or non-job satisfaction one month later. However these interventions did not follow-up participants for longer periods of time and it is uncertain if the gains were maintained. Furthermore these studies show statistical significance but more meagre evidence of clinical significance.

Such counselling may be highly effective but only by those who are in most need of it and therefore most stressed (Tyler & Cushway, 1992). General interventions are needed for a sub-clinical population. The organisational climate needs to offer the opportunity to deal with emotional discomfort using palliative coping strategies (Dewe, 1987). Critical incident debriefing was rarely mentioned by our sample but has been used in medical settings and can be useful in this regard.

#### **4.4.2 Organisational Factors**

Much attention has been paid to intrinsic stressors with less focus on structural ones with few intervention studies aimed at changing the work environment. Koran, Moos, Moos & Zasslow (1983) described the use of the Work Environment Scale to identify target areas for change in a burns unit. It was used to help guide staff in developing solutions and then again to monitor impact of change.

This study highlights that work factors should be addressed to reduce burnout and identifies those changes that might be most beneficial: a reduction in workload and an increase in task orientation, with more emphasis on good planning and efficiency. To reduce work pressure would be most important but it is unlikely that problems of staff numbers are going to be resolved simply in the near future. For this sample the results

further indicate that supervisor support, physical comfort and role clarity should be increased.

Although most of the results were similar across settings some particular aspects in the work environment could be tackled in different settings. In A&E it would be helpful to improve the physical environment; in ITU there is a need to increase the supportiveness of the conditions, increasing peer cohesion and social support. Each of these measures should help increase personal accomplishment and general mental well-being, and correspond to comments received during the interviews.

Staff pay did not come up as a major issue. The quality of the human environment and feeling that one is respected seems to be more important. Whilst pay is one indicator of this, and nationally in the media it seems to be a bigger issue, burnout is related to particular organisational factors rather than simply the stressor of pay.

#### **4.4.3 Possible Approaches**

Interventions may be usefully targeted at staff new to a speciality or particular ward, such as an induction programme, a mentoring system and regular appraisals, all of which were mentioned at some stage during the interviews, and might help increase perceived clarity and supervisor support. This would be aided also by clarifying areas of responsibility and establishing regular ward meeting times.

It is equally important to retain older staff since their experience is invaluable, they have higher self-efficacy, and are often able to provide support for others. In addition many comments were received concerning the skill mix on wards and the need for more experienced people. Staff retention is also important economically due to the time and money taken to train people.

The results indicate that the Health Service should value part-time staff; they are generally less emotionally exhausted and the longer individuals remain in a post the better they become at it. However currently cannot have part-time nursing Sisters

whilst can have part time other professionals, eg medical consultants.

Change should involve not only the removing of negative aspects of the job but also promoting and enhancing positive ones. From the personal accomplishment subscale potential strategies would be to increase patient contact, self-efficacy and physical comfort of the setting. General beliefs in one's ability to perform the work tasks (self-efficacy) can be fostered through continued teaching and study and through a goal-planning type approach, such as appraisal. Ongoing feedback of achievement is needed to develop self-efficacy (Landeweerd & Boumans, 1994) which is consistent with the desire to have one's good work recognised and acknowledged (basic positive reinforcement based on behavioural principles). Management need to be seen to be supportive and grateful for good work in a more day-to-day informal capacity also.

Systematic use of an appraisal system with positive feedback for good work and constructive feedback for problems will also help build supervisor support. Development of social support within and outside of the work setting would potentially have the greatest effect on stress. Low levels of autonomy and innovation may be tolerated better if social support is good (Moos, 1986). Opportunities to gain social support need to be created such as regular ward meetings, and possibly ward training and outings. In addition it may be possible to provide further facilities for staff activities and to meet informally.

Tyler & Ellison (1994) mention the US practice of 'Nurse-for-a-day' where management spend a day as a nurse, in order to better appreciate some of the difficulties faced and indicate to nurses an acknowledgement of their situation. In interviews issues concerning management arose often, so this could be a possibility worth discussing.

It should be emphasised that these are potential areas for discussion and not prescriptive solutions, especially since organisational/environmental change is difficult to achieve. The results indicate possibilities which tend to be consistent with



suggestions received during the interviews, the most common of which were more staff, more training, and more ward meetings.

#### 4.5 Theory

This study highlights burnout (MBI) as a discriminating measure for work-specific distress, with a dissociation from general mental health. It was particularly useful to look at both general and work-specific outcomes so that the differences could be examined. It indicates the relative importance of the work environment when investigating these issues. Using the Schaefer & Moos (1993) model is attractive because it tries to incorporate both personal and environmental systems within a single explanatory model. Our study has indicated that for particular outcome measures different Panels will have more predictive value: Panel I, Health Care System for work-specific distress; and Panel II, Personal System for general mental well-being.

Hence this study has touched on some theoretical issues but it is beyond its scope to consider evidence for the transactional model or structural model. The role of coping has not been established by this study. If from primary appraisal most people do not consider themselves as under threat then there is no need to activate coping strategies. Only when threat is appraised, in times of stress, will strategies be activated. Most of this sample were not distressed and were satisfied with their social support. Hence there is a need to investigate a subset who are distressed and examine their coping strategies.

Transactional research is in relatively early stages and it may not be of immediate use to those seeking intervention strategies. Hence the structural analysis is still important as adopted in a cross-sectional study such as this.

Garden (1994) has argued that burnout is an inner adaptation and that determining the precise nature of any unconscious process involved should be one aim of future burnout research. Furthermore burnout should perhaps correlate better with trait-like measures than state measures if it has an unconscious component.

## 4.6 Future Research

A number of potential avenues for research follow from this study. A distressed subset of participants should be investigated. The importance of social support implies that wider social support could be examined, including work-family interactions; how do work and family settings influence each other? The validity and utility in this setting of the concept of self-efficacy needs to be further established and methods of fostering it explored. A wide range of interventions should be implemented and their success or otherwise evaluated. This should include further identifying adaptive organisational conditions and interventions that attempt to change the work environment.

The continuing NHS Workforce Initiative aims to investigate the relationships between mental health and levels of sickness absence and staff turnover and to evaluate effects of interventions designed to improve mental health, although these are yet to be established.

Whilst it is important in its own right to provide the best possible help for staff mental health there is a further need to examine how patient outcomes are affected by these factors. The relationship between personal and health care system variables and work stressors and patient outcomes should be elucidated.

In this study the data was based on self-report measures collected at a single point in time. If stress is a process there is no way to study it effectively by doing single assessments. Stress research must be conducted, at least in part, intra-individually by studying the same persons in different work contexts and over time. This may suggest some qualitative component to such research. We need to attempt to move beyond solely normative studies that can tell us about the work environment or person variables as separate causal antecedents of stress and distress; relationships are most probably bidirectional so longitudinal research is needed to be sure of causation. However it may be difficult to do longitudinal research in nursing because of potentially high turnover of staff.

Lazarus (1994) further argues that the “emphasis should be on the emotions generated in adaptational struggles rather than on stress per se”. We learn more about individuals and their adaptational struggles from knowing the emotion or emotions generated than we do from knowing that the individual is undergoing this or that amount of stress. Present scales do not address the underlying dynamics of stressful encounters eg being evaluated when one has low self-esteem, being insulted and therefore angry, being shamed or guilty.

#### **4.7 Feedback of results**

All participants will receive written feedback in the form of a one-page summary. A fuller report will be sent to the Board of the Trust with copies to the Executive Nurse Director, Personnel Manager and Clinical Nurse Specialists. Each participating ward will also receive a copy.

Meetings have been arranged with the Executive Nurse Director and Clinical Nurse Specialists meeting in order to feedback and discuss the results. Further meetings have been arranged with each of the participating wards to feedback verbally.



## Conclusion

- 1) Within a representative sample of nurses from different settings in a single hospital the most commonly mentioned stressors in face-to-face interviews were high workload / lack of staff, abusive patients / relatives, dealing with death, and dealing with other professionals.
- 2) In general the results are consistent with previous research: levels of distress were similar across different settings, and at a similar level to a current NHS-wide study; high levels of distress were associated with younger age, high work pressure, and low social support. In addition increased task orientation, clarity, physical comfort and direct patient contact were associated with lower levels of distress.
- 3) For general mental well-being (GHQ) individual factors such as satisfaction with social support were more predictive than health care system factors. For work-specific distress (emotional exhaustion subscale of the MBI) factors in the work environment such as work pressure, amount of patient contact and task orientation were more important.
- 4) There are a number of clinical implications: these include particularly supporting younger staff and attempting to retain more experienced ones; and the need to investigate, develop, implement and assess interventions to tackle work environment factors. Furthermore, other positive approaches should be employed such as greater acknowledgement of good work.

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